



International University Sports Federation

International Association of Physical Education and Sport Universities

National University of Physical Education and Sports of Bucharest

PROCEEDINGS

VIIth International Scientific Conference of Students and Young Scientists

"University Sport: Health and Prosperity of the Nation"

Bucharest, 4-6 May 2017



ISBN 978-606-798-009-7

Section 1

Physical Education, Sports performance and Management

THINKING AND GAME ATTENTION DEVELOPING METHODS AMONG 12-13 YEARS OLD ATHLETES, ENGAGED IN TABLE TENNIS

Bashirova, D.M., Burtseva, E.V.

*Volga region state academy of physical culture, sports and tourism,
Kazan, Russia*

Email: bashirovadi@mail.ru

Abstract: The article considers the game attention and thinking developing methodology content of young tennis players. The authors describe the means, methods, methodical methods, classes organization forms, workload volume, which allow to increase the level of game attention and thinking development in young tennis players.

Key words: table tennis, technique, game attention, game thinking, young tennis players.

Relevance. At the present stage of the table tennis development, the search and new tools and methods development for improving the results of competitive activities is the basis for improving the sporting skills of Russian players [1]. One of the most promising areas is the improving the psychological preparation of athletes, in particular, the development of mental functions and processes that ensure the effectiveness of competitive activities. The development and attention, thinking improvement has a great importance for increasing the effectiveness of sports activities, and, above all, as a function that provides control over what is happening [2, 3].

Analysis of the scientific literature has shown that the current state of the theory and methodology of training in table tennis is characterized by insufficient coverage of the mental processes development – such as attention and thinking in the training process, although their important role in improving the effectiveness of game activities is recognized.

The purpose of the study: to substantiate theoretically and experimentally the effectiveness of the game attention and thinking developing method among 12-13 years old athletes engaged in table tennis.

Objectives of the study:

1. Analyze the scientific and methodological literature on the research problem.
2. To study the properties of attention and thinking manifestation features in 12-13 years old tennis players.
3. To develop and experimentally substantiate the effectiveness of game attention and thinking developing methods among 12-13 years old athletes engaged in table tennis.

Results of the study and their discussion. The development of the experimental methodology took into account the content of the Youth Sports School "Olympus" educational program in table tennis (2012) for young tennis players of the second year training.

The methodology developed by us was introduced into the variable component of the training session and lasted 20-30 minutes, while the tasks and the structure did not change and corresponded to the educational program of the Youth Sports Center "Olimpus" (G.V. Barchukova, 2012). The main tools of the technique were physical exercises with subjects and without subjects, exercises in glasses-simulators, mobile games, technical and tactical tasks, training games, intellectual tasks, game tasks, gymnastics for the eyes, a set of restorative exercises for the eyes.

The main methodical method in attention and thinking developing was the presence of various kinds of complications in the exercises performance, which were realized by: increasing the number of used items; changes in space-time boundaries (use of glasses-simulators); the

use of an additional stimulus to attract attention, and the inclusion in one lesson volume development, attention distribution and switching exercises as well.

We applied the technique in the preparatory and pre-contest periods. The main thrust in the preparatory period is characterized by the direction of the funds used in the training process, the creation of a base for further attention and thinking processes development, on which the more complex tasks set in the competitive period, will be gradually solved. During this period of sports training we use exercises with subjects and without subjects, exercises with glasses-simulators, mobile games, intellectual tasks, gymnastics for the eyes and a complex of restorative exercises for the eyes.

In the experimental group, work on the game attention and thinking development was carried out according to the methodology developed by us, in the control group attention and thinking were developed according to the traditional method, mainly with the help of separate exercises included in the training process.

During the experiment, for the examinees of the control and experimental groups they determined the properties of the game attention level using the "Assessment of attention" technique and the technique called "Red-black Shulte-Platonov tables" (modified version) and the following thinking qualities have been studied: situationality, involvement in practical action, the intensity of mental operations course, speed of thinking. The study of the attention stability, the development of which provides an increase in the time of object concentration, leads us to the following conclusions. For young 12-13 years old tennis players (EG), the attention stability corresponds to a high level (1.08 points), in CG tennis players the indices are in the range of 0.97 points corresponding to the average level of development (Fig. 1). Analysis of the attention concentration study results, as a property expressing the intensity of communication with a certain object or side of activity, showed that the development of this property of attention for the EG examinees is at a high level (0.79 points). For the CG athletes these indicators fluctuate within 0,99 points, which corresponds to the average level of attention concentration.

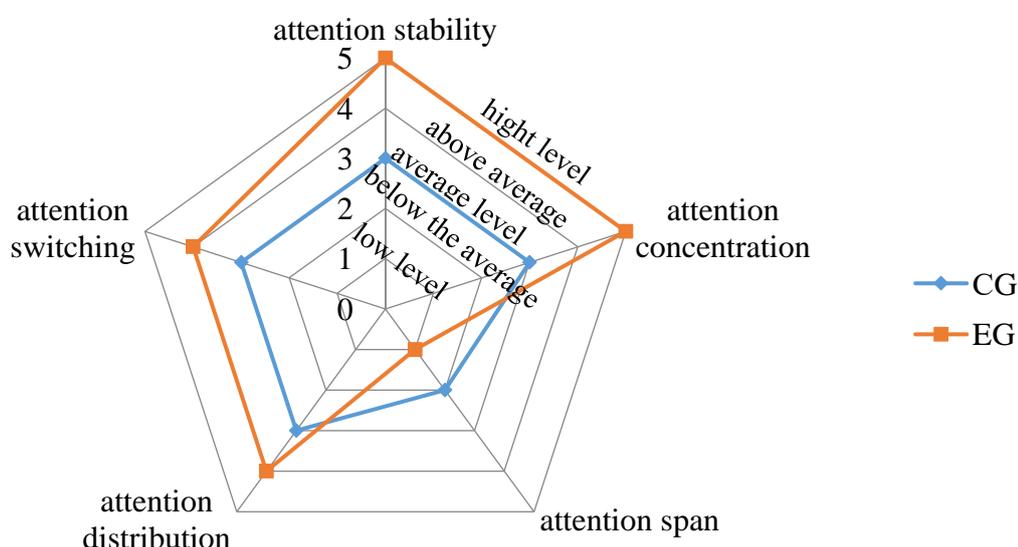


Fig. 1 - Attention properties indicators of 12-13 years old CG and EG tennis players after the pedagogical experiment.

Comparing the indicators of CG and EG attention shifting, it is possible to draw attention to the fact that for young 12-13 years old tennis players the time of attention switching is higher (10.64 points) in comparison with the CG examinees (26.04 points). Исследование

распределения внимания, позволило сделать следующие выводы. The study of the attention distribution let us make the following conclusions. For young 12-13 years old tennis players (EG), the attention distribution corresponds to the level above the average (48.5 points), for the CG tennis players the indicators are within 84.7 points corresponding to the average level of development. Analysis of the attention amount study results showed that for the experimental group examinees (EG) the development of this property of attention is at a low level (61.55 points), which is most acceptable for table tennis players. For the control group athletes (CG), these indicators fluctuate within 51.06 points, which corresponds to a level below the average, is also acceptable for tennis players. Repeated testing of thinking skills development level allowed us to conclude that the level of thinking skills development in the experimental group was higher than the control group athletes level (Table 1)

Attention properties indicators for 12-13 years old tennis players of CG and EG after pedagogical experiment

Indicators of thinking qualities, scores	EG, n = 23		CG, n = 23		P
	Xcp. ± σ	Level	Xcp. ± σ	Level	
Situation	0,92± 0,12	High	0,53± 0,12	Average	P<0,5
Inclusion in practical action	0,92± 0,12	High	0,53± 0,12	Average	P<0,5
Intensity of the mental operations course	4 ± 2,32	High	10± 2,41	Below the average	P<0,5
Speed of Thinking	32 ± 2,21	High	21± 2,13	Average	P<0,5

Comparing the thinking indicators, you can pay attention to the fact that for young 12-13 years old tennis players of the experimental group the coefficient of creative thinking flexibility is 0.5 points, which indicates the plasticity of thinking. The study of thinking lability allowed us to make the following conclusions. Young 12-13 years old EG tennis players have high lability, good learning ability (4 points), for CG tennis players the indicators are within 10 points, corresponding to the average level of development. Analysis of the speed thinking study results showed that the EG examinees have a high speed of thinking and mobility of the nervous processes. For CG athletes these indicators fluctuate within 21 points, which corresponds to the average level of speed of thinking and mobility of nervous processes.

In order to reveal the effectiveness of our methodology, we have analyzed the results of the EG and CG competitions - the tennis players of the experimental group occupy more prizes - 27, than the tennis players of the control group-19 seats.

Conclusions. Thus, the results of the pedagogical experiment allow us to conclude on the effectiveness of the methodology used in the training process of tennis players. It is necessary to begin to include funds for the attention and thinking development during the training process from the preparatory period of preparation, gradually increasing and adapting the level of attention and thinking to the constantly increasing physical and psychological stresses throughout the entire year of the training cycle.

Bibliography

- Barchukova, GV Theory and methodology of table tennis: a textbook for stud. Supreme. Training. Institutions / GV Barchukova, VM Bogushas, OV Matytsin; Ed. G.V. Burchukova. - Moscow: Publishing Center "Academy", 2006. - 528 p.
- Komanov, V. V. Training process in table tennis / V.V. Komanov. - M.: Soviet sport, 2014. - 400 p.
- Medvedev, V. V. The psychological support of sports activities / V. Medvedev. - M.: b.i., 1

PERFORMANCE PREDICTION USING THE METHOD OF STANDARDIZATION, AT SWIMMERS

Bordei Alexandru-Silvian
National University of Physical Education and Sports,
Bucharest, Romania
e-mail: alexandrubordei93@gmail.com
Coordinator: Prof. Univ. Dr. Gheorghe Marinescu

Abstract

This paper aims to identify some of the most effective means of the standard which lead to performance prediction. The subjects participating at our study were 12 junior swimmers, aged 9-10 years old, legitimated at CSSI sports club in Bucharest. The research methods used in this study were: the bibliographical study method, the observation method, the experimental method, the mathematical and statistical method and the graphical representation method. Besides the effort standardization as a performance prediction mean, we wanted to highlight a diagnosis of training efforts in swimming, because many coaches make mistakes in the training methodology.

Keywords: performance prediction; standardization method; swimming.

Introduction

The standardization reduces the improvisation in the line of the operations aimed on maximising the performance and ensures success in achieving the final goal (Stoica, M., 2009).

The prediction represents a rational operation of prediction, premonition, forecast of an event, phenomenon or result. It can be based both on feelings and emotion or on scientific data.

When we talk about sports, the performance prediction can address both on betting or on athlete's individual performance. It can be based on the athlete's experience, emotional and volitional analysis, information regarding the athlete's training level or data coming from the trials (Gagea, A., 2010).

The process of standardized exercising is represented by moves that are repeating with negligible changes, regarding to their structure and external effort parameters. The standardized effort represents both an important condition for the formation and consolidation of the motor skills, and a determined condition of the morphological and functional activity (Matveev, L. P., Novikov, A. D., 1980).

The standardization method represents a complex activity that requires the participation of different field specialists in order to elaborate the standards. This elaboration requires, from the specialists, theoretical and practical knowledge, both fundamental and specialized (Ivan, C., 2009).

The objectives of this paper requires to be accomplished by confirming the hypothesis:

- obtaining the success in competitions, by using the effort standardization method;
- improving the training process by standardize the effort zones means;
- improving the verification process, through performance prediction.

This paper aims to verify one of the most efficient means of the standardized training method, which lead to performance prediction.

In order to carry out our research, there was formulated the following hypothesis: the use of the standardization method in the training lessons of the prepubertal swimmers is helping

to reach the performance prediction and is leading both to the improvement of the training process and to achieve performances in sports.

Subjects, location, period and methods

The subjects participating at our study were 12 junior swimmers, aged 9-10 years old, legitimized at CSS1 sports club in Bucharest.

The research was conducted at Tolea Grintescu swimming complex, in coloboration with professor Sile Gheorghe, in the period July - December 2016.

The research methods used in this study were: the bibliographical study method, the observation method, the experimental method, the mathematical and statistical method and the graphical representation method.

Results

Because the results of the standard exercised were too many, we have decided to present only the ones of the first 3 athletes.

We are presenting, in Fig. 1, the regression obtained by using the standardization method during training, for the subject A. R.

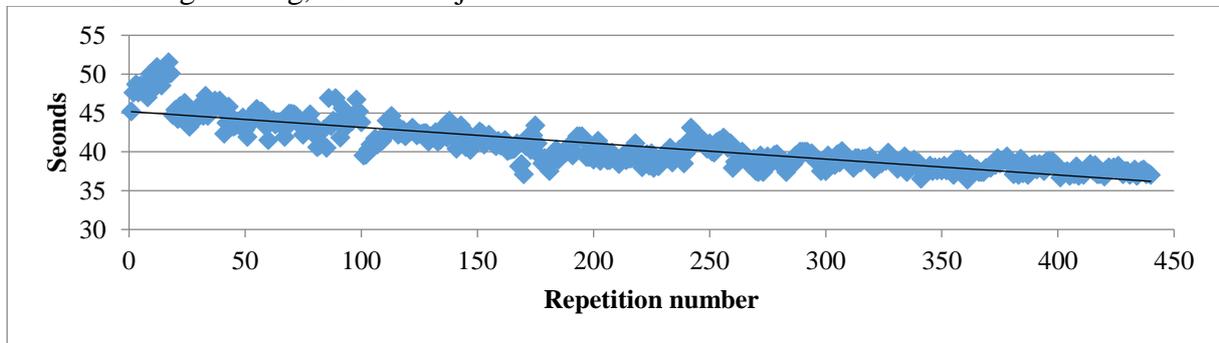


Fig. 1 - Graphical representation of the standard method, for the subject A. R.

We are presenting, in Fig. 2, the regression obtained by using the standardization method during training, for the subject C. B.

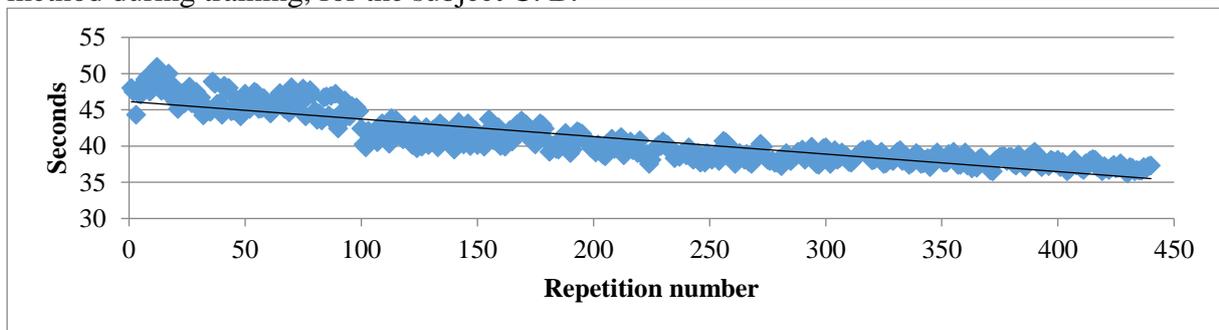


Fig. 2 - Graphical representation of the standard method, for the subject C. B.

We are presenting, in Fig. 3, the regression obtained by using the standardization method during training, for the subject I. R.

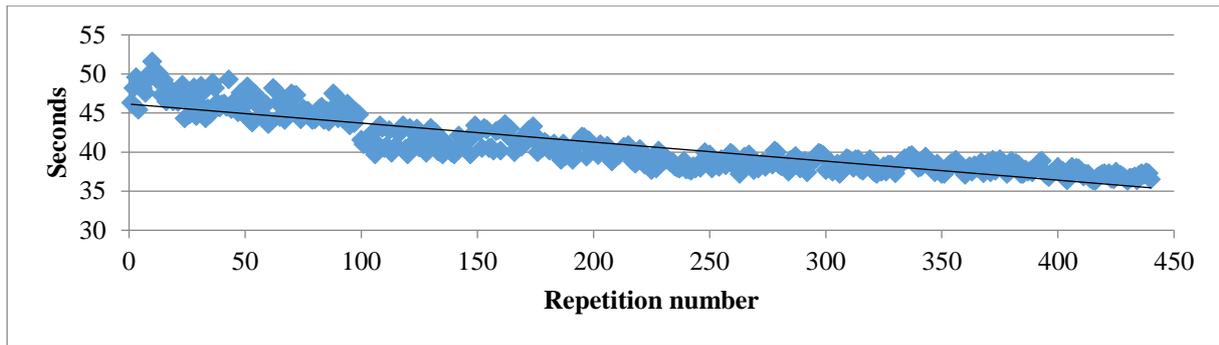


Fig. 3 - Graphical representation of the standard method, for the subject I. R.

We are presenting, in Table 1, the means centralization (Mean), standard deviations (S) and variation coefficients (Vc), for the athletes A. R., C. B and I. R., at the trial of 20 x 50m freestyle, start at 1'30", and in Fig. 4 the arithmetic mean and variation coefficient correlation.

Table 1 – The standard trial of freestyle, start at 1'30", for subjects A. R., C. B. și I. R.

Nr. Crt.	A. R.			C. B.			I. R.		
	Mean (s)	S	Vc (%)	Mean (s)	S	Vc (%)	Mean (s)	S	Vc (%)
1	48,4	1,85	3,8	48,2	1,54	3,2	48,4	1,59	3,3
2	45,3	1,02	2,2	46,2	1,38	3	46,5	1,52	3,3
3	43,4	1,17	2,7	46,2	1,22	2,6	46,1	1,47	3,2
4	43,7	0,88	2	46,2	1,2	2,6	45,7	1,39	3,1
5	43,6	2,01	4,6	44,8	1,45	3,2	44,9	1,34	3
6	41,9	1,38	3,3	41,7	1,21	2,9	41,4	1,23	3
7	42,3	0,71	1,7	41,2	1,19	2,9	41,2	1,21	2,9
8	41,4	0,85	2,1	41,4	1,18	2,8	41,6	1,19	2,9
9	40,1	1,59	4	41,7	1,13	2,7	41,7	1,13	2,7
10	40	1,19	3	40,4	0,95	2,4	40,5	0,91	2,2
11	39,5	0,79	2	39,9	0,8	2	39,9	0,75	1,9
12	39,1	0,77	2	39,2	0,81	2,1	38,7	0,77	2
13	40,6	1	2,5	38,8	0,9	2,3	38,7	0,76	2
14	38,8	0,8	2	38,4	0,78	2	38,6	0,78	2
15	38,8	0,89	2,3	38,7	0,81	2,1	38,7	0,75	1,9
16	39	0,49	1,2	38,6	0,64	1,7	38,3	0,63	1,6
17	38,6	0,61	1,6	38,3	0,62	1,6	38,3	0,74	1,9
18	37,8	0,64	1,7	38,1	0,65	1,7	38,2	0,64	1,7
19	38,1	0,7	1,8	37,8	0,69	1,8	38,1	0,61	1,6
20	38	0,67	1,8	37,9	0,64	1,7	37,8	0,58	1,5
21	37,3	0,48	1,3	37,4	0,52	1,4	37,1	0,54	1,4
22	37,5	0,37	1	36,9	0,35	1	36,9	0,36	1

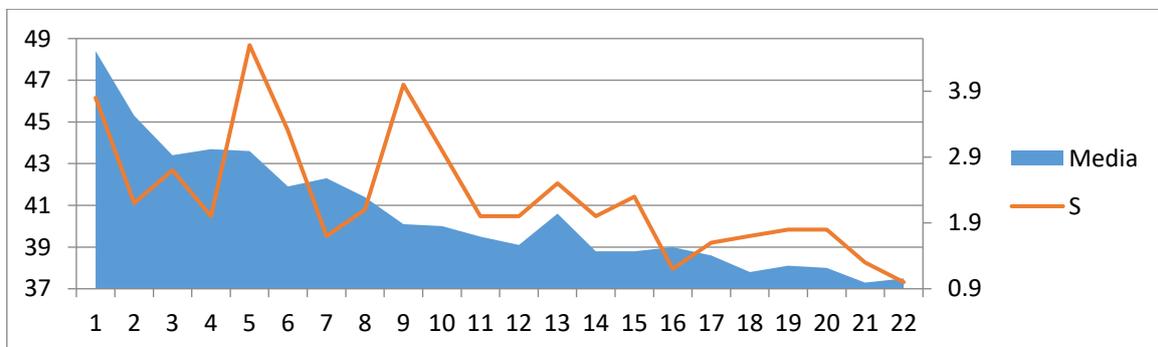


Fig. 4 - The correlation between the arithmetic mean and the variation coefficient for the subject A. R.

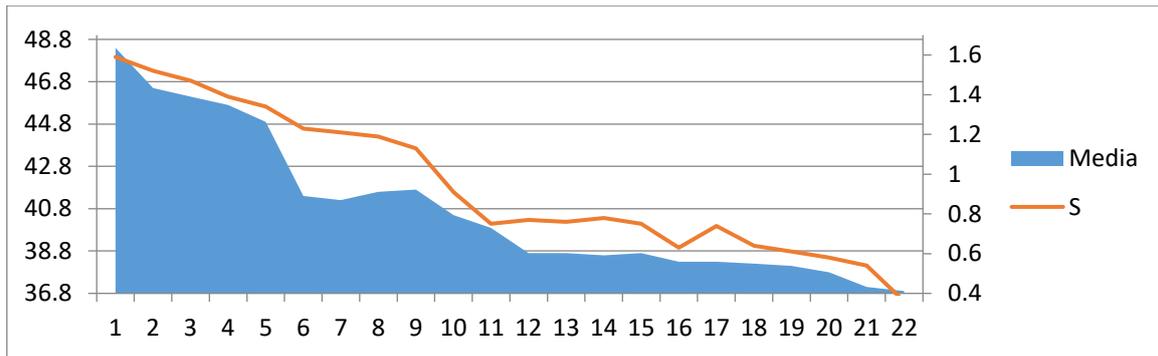


Fig. 5 - The correlation between the arithmetic mean and the variation coefficient for the subject C. B.

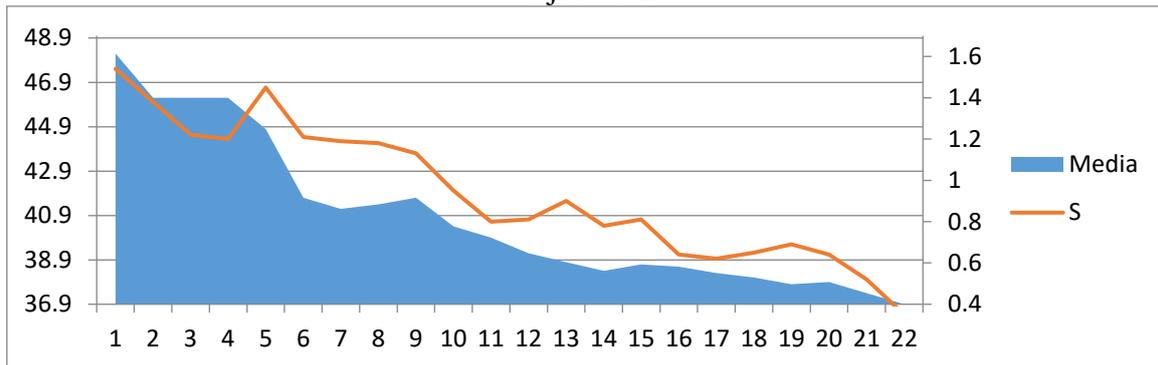


Fig. 6 - The correlation between the arithmetic mean and the variation coefficient for the subject I. R.

We also want to highlight, in table 2, the difference between the results of the first and the last standard.

Table 2 – difference between the results of the first and the last standard (20 x 50m L, start at 1'30''), for the subjects A. R., C. B. și I. R.

	A. R.			C. B.			I. R.		
	Medie (s)	S	Cv (%)	Medie (s)	S	Cv (%)	Medie (s)	S	Cv (%)
	48,4	1,85	3,8	48,2	1,54	3,2	48,4	1,59	3,3
	37,5	0,37	1	36,9	0,35	1	36,9	0,36	1
Diferență	10,9	1,48	2,8	11,3	1,19	2,2	11,5	1,23	2,3

Also, for a sharper representation of the effort zone swam in this period, we are presenting in Fig. 7 the percentage volume of each phase, expressed through the resistance-velocity relation, according to the following characteristics: R1 - base resistance training, R2 - anaerobic threshold resistance training, R3 - mostly aerobic training with overload, S1 - lactate tolerance training, S2 - lactate production training, S3 - overload training.

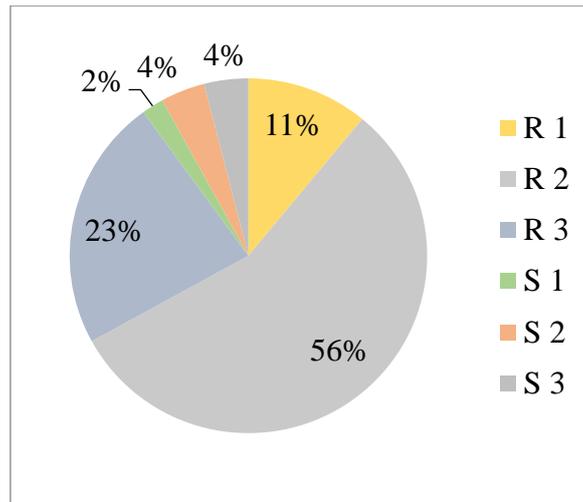


Fig. 7 – Graphical representation of the training volumes swam, expressed through the resistance-velocity relation

Discussions and conclusions

The study began with the application of some control trials to identify the current level of training of each athlete. Also, the same trials were applied after the completion of the experiment to highlight the progress achieved by the athletes. These trials were 25m freestyle, 50m freestyle, 100m freestyle, 200m freestyle and 400m freestyle.

This research had, as main subject, the applying of some standard means used weekly. Thus, by recording the time obtained by the subjects from one standard to another, we can see their progress and can predict the performance.

We observe, in Figures 1, 2 and 3, some very good progress of the results obtained during the preparation, at the trial of 20 x 50m freestyle, start at 1`30 ".

We observe in Figures 4, 5 and 6 a very good correlation between the arithmetic mean and standard deviation. The large undulations at the beginning of the training, continued with some smaller ones toward its end, expresses the adaptation of the athlete to the applied stimulus. We can say, therefore, that a lower dispersion of the standard time obtained by the trial of 20 x 50m freestyle leads to increased performance and so we can predict it.

In Table 2 we observe that the arithmetical mean of the 20 x 50m freestyle, start at 1`30" improved by 10.9s for the subject A. R., with 10,1s for C. B. and with 11,9s for I. R. Although, the interval between repetitions becomes bigger when the repetition time is shorter, but the result is more valuable because the motor task hampered.

The standard deviation records a difference of 1,48 for the subject R. A., 1,19 for B. C. and 1,23 for I. R.

The coefficient of variation of the repetitions executed by A. R, C. B. and R. I. started with a high homogeneity and low dispersion, those remaining the same but with improved values at the last standard.

The total volume swam during our research was of 517.150m, the average training lesson being of 4.972m.

It is noted in Figure 7 that the effort was predominantly anaerobic threshold (56%) and the drills of lactate tolerance had the lowest percentage (2%).

Excessive use of the distance of 25m in athletes` training, for the events of 100m, 200m, 400m, etc. is a mistake, as long as it is not used with a high repetition number.

Besides the effort standardization as a mean of predicting the performance, we wanted to highlight a diagnosis of training efforts in swimming, because many coaches make mistakes in training methodology.

References

- Gagea, A., 2010. Tratat de cercetare științifică în educație fizică și sport, Ed. Discobolul, București, pp. 300
- Ivan, C., 2009. Raționalizare și standardizare în antrenamentul sportiv, Ed. ANEFS, pp. 35
- Matveev, L. P., Novikov, A. D., 1980. Teoria și metodică educației fizice, Ed. Sport-Turism, București, pp. 101-102
- Stoica, M., 2009. Raționalizare și standardizare în antrenamentul sportiv, Ed. Bren, București, pp. 108

THE COACHES' VISION REGARDING THE SHARE OF PSYCHIC FEATURES IN THE SELECTION AND TRAINING FOR INDIVIDUAL AND TEAM SPORTS

BUIUCLIU Ștefan, BREANĂ Bogdan,
National University of Physical Education and Sport,
Bucharest, Romania
e-mail: breana_bogdan@yahoo.com)
Coordinator: Prof. RAȚĂ Gloria, PhD

Abstract: The research is a study which highlights the coaches' vision regarding the share of the dominant psychic features in individual and team sports. In order to highlight the vision, we have used a six- question questionnaire with multiple choices. In this research, we included two groups of coaches of 12 subjects each. The methods used in the research (bibliographical study, survey, statistical and mathematical analysis, graphics), as well as the data interpretation have revealed the differences in view regarding the share of tactical training, something normal in individual sports since winning a competition depends less on tactics and more on physical and technical training, but also the fact that attention comes first, motivation and thinking the second and attitude towards training the third in both individual and team sports during the training process. The hypothesis which claimed that *there may be differences between the perception of the share of the psychic features in coaches of individual and team sports* has been confirmed.

Keywords: vision, share, psychic features, performance

1. Introduction

“Sport psychology has been considered from the very beginning a science of the human’s psycho-behavioural manifestations under the circumstances of competition and aspiration for performance” (Epuran, M, Holdevici, I., F. Tonita, 2008, p. 15), which makes the theory and practice of sport psychology constitute some of the action directions which streamlines sports training. Starting from the idea that a continuous physical demand and the dominant psychic factors determine the achievement of sports performance, we cannot fail to highlight Cratty’s idea, (Cratty, B. 1973), which emphasizes the fact that “the types of sport may suggest the kind of solicitation and stress which a sport has got”, therefore, the sports training must be carried out taking into account the complexity of biological development. Achieving sports performance requires some efforts of will, determining adjustments of the body in demanding situations that differ from one sport to another, from training to competition, but also carefully influencing “the number of stimuli that an athlete can include in a certain sequence” (Epuran, M, Holdevici, I., F. Tonite, 2008, p. 331). “As a process state of the system, feeling and behaviour create harmony and aspiration and expectation create balance (Gagea, A., 2010, p 304), which ensures the possibility of conducting the training and competition activity. Training as a whole is achieved through practice or performance “of physical and mental actions ... fixing the components of actions and their correlation” (Macovei, E., 2001, p. 302), which ensures the effort which produces the body adaptation in its entire complexity (physical, psychic, motor, physiological).

2. Material and methods

The research purpose aimed at highlighting the coaches' perception of the share of psychic features necessary for obtaining performance according to the type of sport practised. In order to achieve the purpose of this study we performed the following stages: setting the topic; determining the sample of the studied coaches; drawing up a questionnaire; applying the questionnaire; recording, processing and analyzing data and writing the paper.

We started from the hypothesis that *there are differences between the perception regarding the share of the psychic features in individual and team sports*. In performing this study we used methods such as: the bibliographical study, survey, statistical and mathematical analysis, graphical method.

In order to know the perception of psychic qualities required in training for sports performance, depending on the branch of sport, we used a questionnaire which included six questions besides the data regarding personal knowledge (initials, age as a coach, coached sport). We used the following assertions with the following answers:

- 1- *Is coach collaboration with a sports psychologist important to develop the individual training methods for athletes? Answers: Yes/ No/ I do not know;*
- 2- *Underline the psychic features listed below which are required in the sports selection when athletes are assessed from a psychic point of view: thinking, imagination, attention, will, attitude, interest, motivation, desire to do sports performance;*
- 3- *What are the top three psychic processes that you consider when training an athlete in individual sports?, What about in team sports?;*
- 4- *From what age do you think it necessary to introduce psychic preparation in sports training in individual sports? What about in team sports?;*
- 5- *What percentage do you think the following represent for **training and competition**: motivation, interest, attitude, imagination, performance desire?;*
- 6- *What percentage do you think the following represent for **training and competition**: psychic training, physical training, technical training, tactical training, and theoretical training.*

In the present study, there were included 24 *subjects* represented by coaches, 12 were from individual sports and 12 from team sports at different clubs in the country in 2016, between September and November. Out of these, 3 coaches were from athletics, 3 from gymnastics, 3 from wrestling and 3 from boxing and from the team sports, 4 were from handball, 4 were from football, 2 from volleyball and 2 from basketball.

3. Results and Discussion

The answers to the questions are mentioned and compiled in the tables below, and their analysis and interpretation were developed for each question both for the group of coaches for individual sports and for the one for team sports.

The data presented in Table no. 1 provided for the assertion: *Is coach collaboration with a sports psychologist important to develop the individual training methods for athletes?*, show that out of the 12 coaches of individual sports, 10 (83.33%) consider coach collaboration with a sports psychologist important and 2 (16.66%) do not know, and in the group of coaches for team sports, 6 (50%) considered it important, 2 (16.66%) not important and 4 (36.67%) do not know. Out of the 24 coaches questioned, 16 (66.66%) consider coach collaboration with a sports psychologist important, 2 (8.33%) not important and 6 (25%) do not know. As it can be observed that not all the coaches give importance to psychic training, which may have negative repercussions on the training process and on obtaining good results in competitions.

Table no. 1 – Coaches' answers to the first assertion

Individual Sports				Team Sports			
Answers	yes	no	don't know	Answers	yes	no	don't know
Total points	10	-	2	Total points	6	2	4

Regarding the assertion no. 2: *Underline the psychic features listed below which are demanded in the sports selection when athletes are assessed from a psychic point of view:*

thinking, imagination, attention, will, attitude, interest, motivation, desire to do sports performance, the answers were different in the two groups and were included in the Table no. 2.

Table no. 2 – Coaches' answers to the second assertion

	(T)	(Im)	(A)	(W)	(Att)	(I)	(M)	(Dp)
Group no. 1 – Individual Sports								
Total points	8	3	10	6	6	2	9	4
Group no. 2 – Team Sports								
Total points	8	6	9	5	7	1	7	3
Total G1 and G2	16	9	19	11	13	4	16	7

* thinking (T), imagination (Im), attention (A), will (W), attitude (Att), interest (I), motivation (M), desire to do sports performance (Dp)

The data presented in the Table no. 2, with the answers of the 12 coaches for individual sports showed that 8 coaches (66.66%) considered thinking (T); 3 coaches (25%) considered imagination (Im); 10 coaches (83.33%) considered attention (A); 6 coaches (50%) considered will (W); 6 coaches (50%) considered attitude (At); 2 coaches (16.66%) considered interest (I); 9 coaches (75%) considered motivation (M) and 4 coaches (33.33%) considered the desire to do sports performance (Dp) as part of the psychic features to be taken into account in the selection process. Regarding the answers of the 12 coaches for team sports, data (Table no. 2) show that 8 coaches (66.66%) considered thinking (G); 6 coaches (50%) considered imagination (Im); 9 coaches (75%) considered attention (A); 5 coaches (41.66%) considered will (W); 7 coaches (58.33%) considered attitude (At); 1 coach (8.33%) considered interest (I); 7 coaches (58.33%) considered motivation (M) and 3 coaches (25%) considered the desire to do sports performance (Dp) as part of psychic features to be taken into account in the selection process.

According to the 24 coaches questioned, the first four psychic factors to be taken into account in the selection, in the order of the number of underlining are: attention - 19 choices; motivation and thinking – 16 choices; attitude - 13 choices and will - 11 choices.

For the assertion no. 3: “*What are the top three psychic processes that you consider in training an athlete in individual sports? What about in team sports?*”, the coaches answered with open items. Each person who completed the questionnaire mentioned them individually.

Table no. 3 – Coaches' answers to the third assertion

Group no. 1 – Individual Sports						
	(A)	(Im)	(In)	(W)	(P)	(M)
Total points	9	4	5	8	6	4
Group no. 2 – Team Sports						
Total points	6	7	8	6	8	1
Total G1 and G2	15	11	13	14	14	3

* attention (A), imagination (Im), intelligence (In), will (W), perseverance (P), motivation (M).

The answers of the 12 coaches for individual sports (Table no. 3) showed that 9 coaches (75%) considered attention (A) as a psychic feature which should be addressed to in training an athlete; 4 coaches (33.33%) considered imagination (Im); 5 coaches (41.66%) considered intelligence (In); 8 coaches (66.66%) considered will (W); 6 coaches (50%) considered perseverance (P) and 4 coaches (33.33%) considered motivation (M) as part of the psychic features to be taken into account for training. In addition, the answers of the 12 coaches for team sports (Table no. 3) underlined that: 6 coaches (50.00%) considered attention (A); 7 coaches (75%) considered imagination (Im); 8 coaches (66.66%) intelligence (In); 6 coaches (50%) considered will (V); 8 coaches (66.66%) considered perseverance (P) and 1 coach

(8.33%) considered motivation (M) as part of psychic factors to be taken into account for training.

According to the 24 coaches questioned, the top three psychic features a coach takes into account when training athletes are: attention (15 choices), will and perseverance (14 choices) intelligence (13 choices). As shown, on the first place to give priority in training we found attention, on the second – will and on the third - intelligence.

The answers to the assertion no. 4: *From what age do you think it necessary to introduce psychic preparation in sports training in individual sports? What about in team sports?* can be found in the table below.

Table no. 4 – Coaches' answers to the fourth assertion

Crt. no.	Under 11 years	11-12	13-14	15-16	17-18	Over 19 years
Gr. 1	2	1	2	6	1	
Gr. 2	1	2	2	5	2	
Total	3	3	4	11	3	

As it can be seen (Table no. 4) out of the 24 coaches, 11 coaches, representing 45.83%, considered necessary to introduce the psychic training at the age of 15-16 years, 4 coaches representing 16.66% considered the age of 13-14 good, and 3 coaches representing 12.5% considered each psychic training good starting from under 11 years of age, between 11 and 12 of age and, respectively, between 17 and 18 of age. Most coaches prefer the psychic training to be started at the early teens, such as, 13-16.

The answers to the assertion no. 5: *What percentage do you think the following represent for **training** and **competition**: motivation, interest, attitude, imagination, performance desire?;* are found in

Table no. 5 – Coaches' answers to the fifth assertion

Group no. 1 – Individual Sports						
Crt.no.	Motivation (M)	Interest (In)	Attitude (Att)	Imagination (Im)	Desire to do Sports Performance (Dp)	Will (W)
Ma	9.17	11.67	10.42	7.50	28.75	32.50
AS	2.89	6.85	4.98	2.61	7.11	5.44
V.max	15	25	20	10	40	40
V.min	5	5	5	5	20	25
Group no. 2 – Team Sports						
Ma	15.00	11.67	7.92	25.83	26.67	13.33
AS	4.77	4.44	3.34	7.02	7.18	3.89
V.max	25	20	15	40	40	20
V.min	10	5	5	15	15	5

* motivation(M), interest(In), attitude(Att), imagination (Im), desire to do sports performance (Dp) and Will (W).

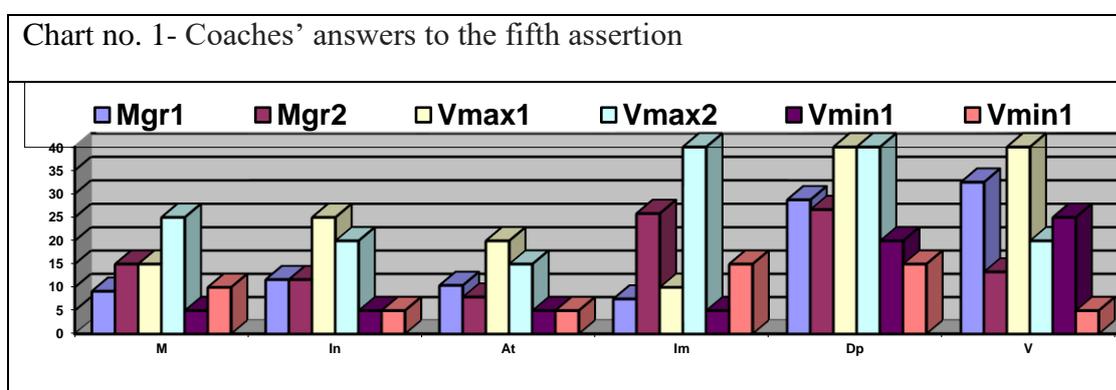
After processing the data, as shown in the table above, there are different opinions among coaches for individual sports and team sports regarding the share of the psychic features in training athletes.

The coaches of Group A for individual sports believe that psychic features have the following share (in a decreasing order) during training: will - with an average percentage of 32.5% with extreme values of 25% and 40%; desire to do sports performance - with an average percentage of 28.75% with extreme values of 20% and 40%; interest - an average percentage of 11.67% with extreme values of 5% and 25%; attitude - an average percentage of 10.42% with extreme values of 5% and 20%; motivation - to an average percentage of 9.17% with

extreme values of 5% and 15%; imagination - with an average percentage of 7.50% with extreme values of 5% and 10%.

The coaches of Group B for team sports also believe that psychic features have the following share (in a decreasing order) during training: desire to do sports performance – with an average percentage of 26.67% with extreme values of 15% and 40%; imagination - with an average percentage of 25.83% with extreme values of 15% and 10%; motivation - to an average percentage of 15.00% with extreme values of 10% and 35%; will - with an average percentage of 13.33% with extreme values of 5% and 20%; interest - an average percentage of 11.67% with extreme values of 5% and 20%; attitude - an average percentage of 7.92% to 5% S extreme values 15%;

Comparing the answers of the coaches of individual sports with those given by the other coaches for team sports, it can be noticed that there are differences between the average values and the maximum and minimum values, as shown in the table below no. 5 and chart no. 1.



Regarding the coaches' opinions, it can be observed the fact that: both groups of coaches pay greater attention to the education of the desire to do sports performance at a rate of 28.75% and 26.67%; both groups of coaches give the same importance to the education of the interest in practising sports with a percentage of 11.67%; the coaches for individual sports also consider will with a great share of 32.50% and pay less attention to imagination with a rate of 7.50%; the coaches for team sports also pay attention to the education of imagination at a high percentage of 25.83% and less attention to attitude at a rate of 7.92%; thus, there are differences of conception of the education of psychic features between the coaches for individual sports and those for team sports.

For the assertion no. 6 - *What percentage do you think the following represent for training and competition: psychic training, physical training, technical training, tactical training, and theoretical training*, there also appeared differences in the proportions of psychic, physical, technical, tactical or theoretical training

Table no. 6 – Results for the sixth assertion

Group no. 1 – Individual sports					
Crt.no.	Training				
	psychic	physical	technical	tactic	theoretical
Ma	9.17	47.50	35.67	3.25	4.58
SD	3.59	5.00	6.21	1.91	1.98
V.max	15	55	45	5	10
V.min	5	40	25	1	2
Group no.2 – Team sports					

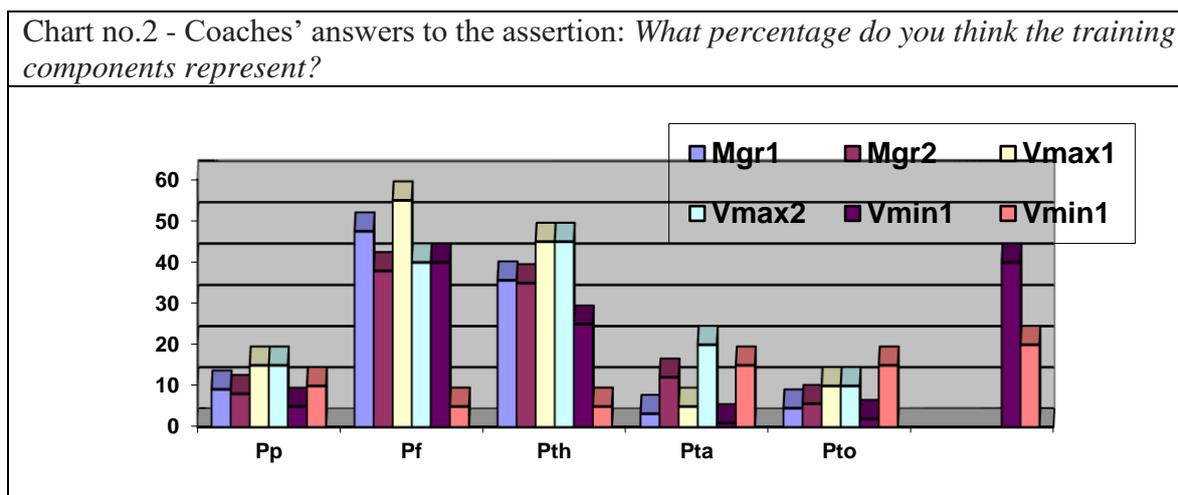
Ma	8.08	37.92	35.00	12.08	5.67
SD	4.21	2.57	4.77	4.98	2.10
V.max	15	40	45	20	10
V.min	2	35	30	5	3

* Psychic Training (Tps), Physical Training (Tph), Technical Training (Ttech), Tactical Training (Tt) and Theoretical Training (Tth), Standard De.

After processing the data, as shown in the table above, there are different opinions between the coaches for individual sports and those for team sports regarding the share of the preparation components in training athletes.

The coaches of Group A for the individual sports consider that out of the athletes' training component, the dynamics of the percentages in a descending order is the following: physical training - with an average percentage of 47.5% with extreme values of 40% and 55%; technical training - with an average percentage of 35.67% with extreme values of 25% and 45%; psychic training - with an average percentage of 9.17% with extreme values of 5% and 15%; theoretical training - with an average percentage of 4.58% with extreme values of 2% and 10%; tactical training - with an average percentage of 3.25% with extreme values of 1% and 5%.

Comparing the answers of the coaches of individual sports with those of the coaches for the team sports, there are differences between the average values and the maximum and minimum values, as shown in Table no. 7 or Chart. 2.



* Psychic Training (Tps), Physical Training (Tph), Technical Training (Ttech) and Theoretical Training (Tth)

Regarding the coaches' opinions, we can notice that:

- both groups of coaches pay attention to the technical training in performance sport at a rate of 35.67 and 35.00%;
- both groups of coaches give the same importance to the theoretical training with 4.58% and 5.67% and to the psychic training with 9.17% and respectively 8.08%;
- the coaches for individual sports also give a large share to the physical training at a rate of 47.50% and less attention to the tactical training at a rate of 3.25%;
- the coaches for team sports give to the physical training a high percentage rate of 37.92% and less attention to the tactical preparation at a rate of 12.08%;
- there are differences of view regarding the share of the tactical training, a normal aspect since winning a contest in individual sports depends less on tactics.

3. Conclusions

In the context of having knowledge of the athletes' psychic training, as it can be seen from the questionnaire, an important role is played by the coach, but recent studies show that many of the athletes' problems may have deep implications if they are not handled carefully. Psychology is difficult to be approached by coaches and hard to be accepted by coaches and athletes. At the end of this work following the data interpretation, we have reached a number of conclusions on the coaches' perception of the share of the psychic factors in individual sports and team sports.

We have drawn the following conclusions:

- not all coaches give importance to the psychic training, which may have negative repercussions on training and on getting results in competition. Out of the 24 coaches surveyed, 16, namely 66.66%, consider *the coach collaboration with a sports psychologist important*, 2, namely 8.33%, don't and 6, namely 25%, do not know;
- *in the sports selection, regarding the psychic features*, out of the 24 coaches, 19 consider attention on the first place, 16 place motivation and thinking on the second and 13 place attitude towards training on the third;
- in training athletes, 15 coaches also consider the education of attention, 14 the education of will and perseverance and 13 the development of intelligence;
- most coaches prefer to start psychic training in the early 13-16-year-old teenagers;
- the coaches for individual sports consider that the share of psychic features in the training process has an average of 32.5% for will, 28.75% for desire to do sports performance, 11.67% for interest, 10.42% for attitude, 9.17% for motivation and 7.50% for imagination;
- the coaches for team sports consider the share of psychic features in the training process has an average of 26.67% for the desire to do sports performance, 25.83% for imagination, 15.00% for motivation, 13.33% for will, 11.67% for interest and 7.92% for attitude;
- in the preparation process, the instructional components have different shares in training, so both groups of coaches pay great attention to the technical training in sports performance at a rate of 35.67 and 35.00%; both groups of coaches give the same importance to the theoretical training with 4.58% and 5.67% and to the psychic training with 9.17% and respectively 8.08%; the coaches for individual sports also give a large share to physical training at a rate of 47.50% and less attention to tactical training at a rate of 3.25%; the coaches for team sports also consider the physical training with a high percentage at a rate of 37.92% and less attention to the tactical preparation at a rate of 12.08%. Thus, there are differences of views regarding the share of the tactical training, which is normal since winning the contest in individual sports depends less on the tactical training and more on the physical and technical training.

The hypothesis, which considered that *there may be differences between the perception of the share of the psychic features in the coaches for individual sports and those for team sports, has been confirmed.*

Bibliography

1. Epuran, M, Holdevici, I., Tonița F., (2008) Sports Performance Psychology: Theory and Practice (in Romanian: *Psihologia Sportului de performanță: teorie și practică*), FEST Publishing House, Bucharest, p. 15 .
2. Cratty, B.J., (1973). *Psyching in Sport: Guidelines for Coaches and Athletes*, Prentice Hall Publishing House, New Jersey

3. Gagea, A., (2010). Scientific Research Treaty in Physical Education and Sport (in Romanian: *Tratat de cercetare Științifică în educație fizică și sport*), Discobolul Publishing House, Bucharest, pag, 304.
4. Macovei, E., (2001). Pedagogy – Education Theory (in Romanian: *Pedagogie – teoria educației, Vol. I*, Aramis Publishing House, Bucharest, p. 302

THE SELECTION OF CHILDREN FOR THE FIELD AND TRACK ATHLETICS CLASSES BASED ON THE INDEXES OF PHYSICAL DEVELOPMENT

*Nadejda Bushueva,
State University of Physical Education and Sport,
Chisinau, Moldova
e-mail: nadica95@rambler.ru*

Coordinator: Iliin Grigore, Ph.D in Pedagogy, university professor

Abstract. It was realized a research of morphologic and functional symptoms in order to determine the predisposition toward one of the athletics trials. The preliminary results showed that the 14-15 years old girls tend to manifest speed and speed-force skills.

Keywords: physical development, morphologic and functional symptoms, dynamometry, tapping test, explosive force, reaction.

The selection of children for the field and track athletics classes is one of the most present-day problems nowadays. The sport theory includes several stages considering the fact that the selection, according to V.M. Volkov and V.P. Filin (1986), is a long-term problem and is realized in a few stages. The authors distinguish four stages:

1. The preliminary (primary) selection.
2. The stage of profound control of the correspondence of the selected children to the requirements presented to the successful specialization in a chosen type of sport (the secondary selection).
3. The stage of sport orientation.
4. The stage of selection into national teams.

In the sport school programme the stages of selection are connected with training in different types of educational groups, one of which is the group of primary preparation.

Being rationalized, the system of selection will give the opportunity to distinguish the inclinations and abilities of children on time.

The data accumulated in the process of research by the specialists in the sphere of physical education and sport allow to conclude that individual indicators characterizing morpho-functional peculiarities of the movement functions have an important meaning while developing the methods of prediction of its sport suitability.

The analysis of theoretical and experimental works allows to formulate the following criteria of selection:

- pedagogical;
- medico-biological;
- psychological.

We have made preliminary researches to distinguish medico-biological criteria of the selection characterizing morpho-functional attributes, the condition of functional and sensory systems of the body and individual peculiarities of young sportsmen.

Concerning everything written earlier, a working hypothesis was put forward, which presumes that the increase of certain individual morpho-functional indications will allow to some extent to distinguish in future the specialization of sportsmen. Evidently, it is very difficult to be done by the only attribute as complex examinations are necessary.

The aim of the work is to improve the condition of functional and sensory systems of the body of young sportsmen for further (preliminary) choice of specialization.

Based on the aims of the work, the following problems were put:

1. The theoretical analysis of the scientifico-methodological literature.

2. The identification of major rates of morpho-functional symptoms while selecting children for the field and track athletics.

3. To prove experimentally the most rational measures of physical development of children while selecting to the Child and Youth High School.

The following methods of research were used to solve the indicated problems during the work:

1. Theoretical analysis and synthesis of literary and documentary data.
2. Anthropometry.
3. Hand dynamometry.
4. Tapping-test.
5. Reaction to light and sound.
6. Spirometry.
7. Explosive strength (jump up according to Abalakov).
8. Mathematic and statistic methods.

The natural pedagogical experiment was held in 2016 on the basis of track and field athletics arena, in which young sportsmen from special schools № 3 and MMS took part.

The received quantitative data were processed by the accessible mathematic and statistic methods (П.П.Демченко, 2009).

The results of the researches.

The systematic physical education and sport activities have positive influence on the growing organism.

Different morphological and functional features of the human body make in complex physical development. The indicators of physical development are changed by the influence of genetic peculiarities and a complicated set of social and demographic conditions.

A considerable experience about the influence of physical exercises on the growing organism, on its morpho-functional status (В.К.Бальсевич, 2003) was accumulated by the scientific data.

We have made a research of the indicators of the physical development of sportsmen of different age, the data are shown in Table 1.

The study of physical development was defined from the indicators shown in Table 1. The age of children was shown in the range of 10-14 years.

To measure strength possibilities one uses mostly dynamometer. In this case hand (the right and left hand) dynamometry was measured. It should be, nevertheless, noted at once that hand dynamometry is a little informative method as it is difficult to judge the strength of a person in general by the strength of flexor muscles though it is still in use. The average results of sportsmen are equal to $21,8 \pm 1,6$ and $21,2 \pm 1,8$ for the right and left hands accordingly what is an average indicator for the girls of this age.

The jump up from the place (according to Abalakov) refers to pedagogical methods of defining fitness. The results shown by the girls $25,4 \pm 1,2$ cm can be regarded according to the level of development as higher than average. Also it is necessary to be noted that this indicator defines the manifestation of explosive and speed-strength abilities of children.

With the help of the tapping test the maximum frequency of movements by the hand for 10, 20 and 30 seconds was measured. The given test reflects the functional condition of the moving sphere and also the power of nervous system. According to literary sources the maximum frequency of hand movements of trained sportmen is equal in average to 70 blows in 10 sec.

Table 1. The average team data of indicators of physical development of the 10-14 year old girls

Name, Surname	Age	Height	Weight	Dynamometry		Jump Up	Tapping test			Reaction		Spirometry
				right	left		sound	light				
Z. A.	10	135	29	14	8	24	62	55	50	28	31	1000
C. A.	11	146	38	13	14	26	69	73	65	22	19	1900
L. O.	13	155	42	20	22	24	75	71	63	22	25	1800
Ş. D.	14	160	51	22	27	23	69	65	59	25	21	1700
S. A.	12	154	44	24	14	25	63	61	59	19	28	2200
C. M.	13	158	43	20	17	28	64	64	59	22	22	2000
M. A.	13	136	30	11	13	27	79	80	71	18	19	1700
M. N.	14	159	46	25	31	33	62	57	57	22	15	2100
V. D.	13	156	43	22	20	24	74	73	65	16	15	2000
C. L.	12	152	41	30	25	24	67	67	64	15	19	1900
F. D.	14	170	56	38	38	24	85	81	74	18	18	1900
B. D.	14	162	48	29	30	38	77	73	65	16	19	2700
C. A.	14	168	54	33	32	22	64	65	61	13	16	1700
G. Iu.	14	166	58	31	33	18	74	68	61	16	18	1600
C. A.	14	162	48	18	18	22	68	65	59	16	18	2100
O. E.	14	147	33	18	24	27	77	81	74	15	18	1800
G. L.	14	152	40	30	20	23	64	60	54	19	22	2200
P. D.	13	148	42	18	15	24	58	57	61	18	22	3500
Ț. T.	13	153	39	19	12	28	71	60	56	18	21	2500
S. D.	11	146	37	12	12	20	57	60	54	18	22	1200
A. M.	14	160	39	10	20	29	78	72	68	16	18	1800
\bar{X}	14,4	162,25	45,05	21,8	21,2	25,4	69,3	67,0	61,8	18,7	20,3	1996,7
σ	3,74	35	29	7,1	7,9	5,3	7,4	6,9	6,3	3,96	4,2	661,4
m	1,07	9,36	7,75	1,6	1,8	1,2	1,6	1,54	1,4	0,9	0,9	147,96

In our case the average results for 10 sec. are equal to $69,3 \pm 1,6$, for 20 sec.-to $67,0 \pm 1,54$ and for 30 sec. to $61,8 \pm 1,4$. The received results say that for the first 10 sec. the results are normal, then for 20 and 30 sec. the results get lower and with them decreases the lability of nervous processes.

Tapping test can be successfully applied to control speed qualities and dexterity, to study the dynamics of nervous processes in the prestart condition.

To measure the time of movement (sensomotor) reaction the reflexometer was used which was developed in the State University of Physical Education and Sport under the direction of P.P. Demchenko.

The time of sensomotor reaction was measured to the optic (light) and acoustic (sound) signals and is equal to $18,7 \pm 0,9$ sec. to the light and to $20,3 \pm 0,8$ sec. to the sound signals. It is important to note that these results are very good. This gives an opportunity to judge about a good functional condition of the nervous system and analyzers.

Comparing the average results of spirometry with evaluation tables it should be noted that the majority of girls have an average result $1966,7 \pm 147,96$ with a little deviation.

With the aim of defining narrowness and direction of the studied indicators we have made a correlative analysis which has allowed to reveal the statistic interconnection of the average team data of physical development of 10-14 year old girls (Table 2).

Table 2. Correlative matrix of interconnection of morpho-functional indicators

b	c	d	e	f	g	h	i	j
b	0,792	-0,066	0,154	0,061	0,092	-0,303	-0,234	0,170
c		0,084	0,422	0,358	0,403	-0,343	-0,594	0,032
d			0,235	0,150	0,213	0,040	-0,120	0,385
e				0,880	0,799	-0,282	-0,463	-0,072
f					0,931	-0,385	-0,512	-0,125
g						-0,470	-0,524	0,096
h							0,502	-0,266
i								-0,108

It should be mentioned that there is a little quantity of statistically reliable interconnections. The highest and the most reliable level of importance is observed among related indicators. For example, the statistically reliable level of importance is observed between the power of the right and left hand $r=0,799$ at $P=0,001\%$ and also between the Tapping test for 10 sec. and 20 sec. $r=0,880$ and for 20 sec. and 30 sec. $r=0,931$. An opposite proportional dependence is observed between the Tapping test and the time of reaction to the sound and light but the level of importance is a little lower $P=0,05\%$.

In our opinion one shouldn't ignore the medico-biological criteria while selecting children for classes at a Child and Youth High School in spite of low correlative connections.

In such a way the prestart researches allow to make the following **conclusions**:

1. The medico-biological criteria characterizing morpho-functional attributes and the condition of functional and sensory systems of the body are the indivisible part of selection of the children for classes at a Child and Youth High School.

2. The average team and separate indicators quite correspond the level of physical development of 10-14 year old girls and also the individual qualities and their occurrence.

3. The individual indicators of physical development correspond to the sensitive periods for the 10-14 year old girls.

4. The results of individual indicators of physical development give the reason to say that girls have the most ability to manifest speed and speed and strength possibilities.

5. The given indicators in this work are simple and available to be used by coaches in their activity while testing sportsmen.

REFERENCES:

1. Бальсевич В.К., Лубышева Л.И., Прогонюк Л.Н. Новые векторы модернизации систем массового физического воспитания детей и подростков в общеобразовательной школе. В: Теория и практика физической культуры, 2003. №4. с. 56-59.
2. Волков Л.В. Теория спортивного отбора: способности, одаренность, талант. Киев: Вежа, 1997. 128 с.
3. Волков В.М., Филин В.П. Спортивный отбор. Москва: Физкультура и спорт, 1986. 176 с.
4. Демченко П. Математико-аналитические методы в структуре педагогических исследований физической культуры. Кишинев, 2009. 518 с.
5. Manolachi V. Teoria și metodică selecției în probele sportive olimpice. Chișinău, 2016. 303 p.

STUDY ON THE IMPORTANCE OF IMPROVING PASSING GAME WITH BOTH FEET TO IMPROVE PERFORMANCE IN FOOTBALL

Felegeanu Constantin-Cosmin, Sburlan Irina

Felegeanu, C., Sburlan I.

National University of Physical Education and Sports (NUPES)

Bucharest, Romania

e-mail: cosmin.felegeanu@yahoo.com

Coordinator: Prof.univ.dr. Rață G.

Abstract: The research was conducted over 12 "Junior C" subjects belonging to Ceahlăul Piatra-Neamt football club. The goal was to improve players' passing game with both feet, especially with the weaker foot.

As methods used, there were: analytical passing exercises (short passes -up to 10 meters and medium passes -up to 20 meters) towards a fixed point; passes between two or more players both on static or dynamic position; passing game with semi-active or active opposition.

The results revealed a significant improvement of succes rate of passing the ball with both feet, not only for short passes but for medium passes as well, meaning an increase of completed passes to almost 90%, and also a higher number of goal attempts.

Keywords: passing game, pass, accuracy, technique, weaker foot

1. Introduction

Football is constantly changing, looking for new ways to obtain higher individual and collective performance. The game itself has become more combinational, the number of passes between teammates being higher during a game, and this came as a result of the increasing trend in demand for more and more tactics in modern football.

For this reason, a component of the 12-14 year old player model, aims the ability of passing the ball to teammates, with both feet, with a high rate of success, regardless of the situation on the pitch.

Combinations between two, three or more teammates, thus become the most common way to destabilize the defense and to create dangerous actions at the opposite goal. For this reason, the passing game must provide a high accuracy of passes, whether it is about short or medium length passes. To achieve that however, players must be able not only to pass the ball with their favorite foot, but also with the weaker foot. That is why the objectives of the training for the junior level aim the "*development of technical skills and tactical actions specific for practicing of the different branches of sports*" (Rață G., 2008), the individual passing technique being enhanced by "*exercises aiming the passing of the ball at different heights and distances*" (Apolzan D., 2013).

Given the fact that speed of the game has increased very much in recent years, while time for taking tactical decisions by a player has dropped, football player must be able to rely equally on both feet when it comes of passing the ball to other teammates in order to continue the attacking action. Also, any return or change of direction that might be encountered movements in the game when the player wants to pass the ball forward, are responsible of reducing the effective time left for passing the ball, or taking the right decision.

This aspect is also in close contact with the avoiding of any possible injuries caused by tough contacts with some opponents, as „*a focus on reducing errors, whether by means of tactics or improvement in technique, is likely to benefit both performance and safety.*” (Stratton G., 2004)

Basically, it is essential to create a wider basic motor skills among juniors, which helps in situations of the game when the player is required to take the best decision under pressure, in less time and limited space. Therefore, "*as the motor skills reserve of the footballer is richer, the faster he will learn the technique and will always find the best solution to all new situations encountered in the game.*" (Dumitrescu Gh., 2011).

Therefore, we believe that practicing more with the weaker foot through various exercises and various conditions, can bring a significant benefit in overall team's performance and results in official matches, while help creating more attacking actions and finding empty spaces for passing the ball.

2. Purpose

The research involved 24 subjects of 12-14 years junior C, 12 from team F.C. Ceahlăul representing the experiment group and 12 from L.P.S. Piatra Neamț, representing the control group. The *purpose* of the research was to highlight the importance of exercises involving the use of favorite foot and weaker foot also in the training of 12-14 years-old football players, in order to build more attacking actions, and also to ensure a high speed of the game, these things being essential in improving team's performance and improving individual players' technique.

In this research, we have *assumed* that the improvement of the game for a football team and implicitly creating a large number of attempts at the opposite goal depends directly on the level of the player's technical acquisitions and, also, on playing a very good game with both feet especially in terms of passing the ball to teammates in order to have a higher speed and fluency of the attacking actions. The *hypothesis* for this research is that: passing the ball with both feet and especially with the weaker foot can be improved by a diverse range of exercises that are constantly practiced. In order to do this, *over a two-month period* during the training sessions, the experimental group members had to perform several types of exercises such as passing the ball to fixed points, to the teammates, made from static or dynamic position.

3. Tasks

In order to improve the rate of success of the passes performed with the favorite foot but also with the weaker foot, the members of the experiment group performed during the training sessions the following exercises: from static ball, striking the ball with flat foot to a wall at 5 meters away; from static ball, striking the ball with flat foot to a wall at 15 meters away; striking the ball with flat foot, with both feet and without picking up the ball, to a panel located at 5 meters away; hit the wall to a fixed point, from 10 meters away, in motion; the player, located between two walls positioned at 10 meters away from the player each, sends the ball alternately to each of them; two players face-to-face, at 15 meters away each other, pass the ball through a 1 meter wide goal, alternately with both feet, by picking-up the ball first; from movement, passing the ball in three with the exchange of seats (the ball must be sent continuously towards the player being temporarily in the middle, by picking-up the ball first). The evaluation of the progress made after this training period consisting in all the individual technical improvements in passing the ball with accuracy to short and medium distances, as well as the improvement of the collective game, consisting in the increase of the number of completed passes in a game, as well as the increase of the number of dangerous actions at the opposite goal, was done by each subject by completing a drill (fig. 1), where the ability to pass the ball with both feet to short and medium distances was assessed, as well as the performance as a team through a friendly match against the control group.

As for the individual assessment of the subjects through the drill, they had to pass the ball with both favorite and weaker foot, at various distances, with or without stopping the ball, alone or together with a teammate. Specifically, the following had to be done (fig. 1): in the

first part of the drill – passing the ball with the right foot to the right side through a 1 meter width goal then passing the ball with the left foot to the left side through a 1 meter width goal (number of repeats - 1, distance to goal - 5 m); in the second part of the drill – passing the ball with left and then with right foot to the right side towards a 5 meters away wall, then passing the ball with both feet to the left side towards a 5 meters away wall (reps 3 + 3); the third part of the drill – passing the ball alternately with both feet to left and right side towards two walls at 10 meters away each from the player (reps 3 + 3); the fourth part of the drill – passing the ball with a teammate at 15 m away one from each other, alternately with both feet, from 2 touches (stop - pass), with the ball being sent through 2 meters width goal. (reps- 6) .

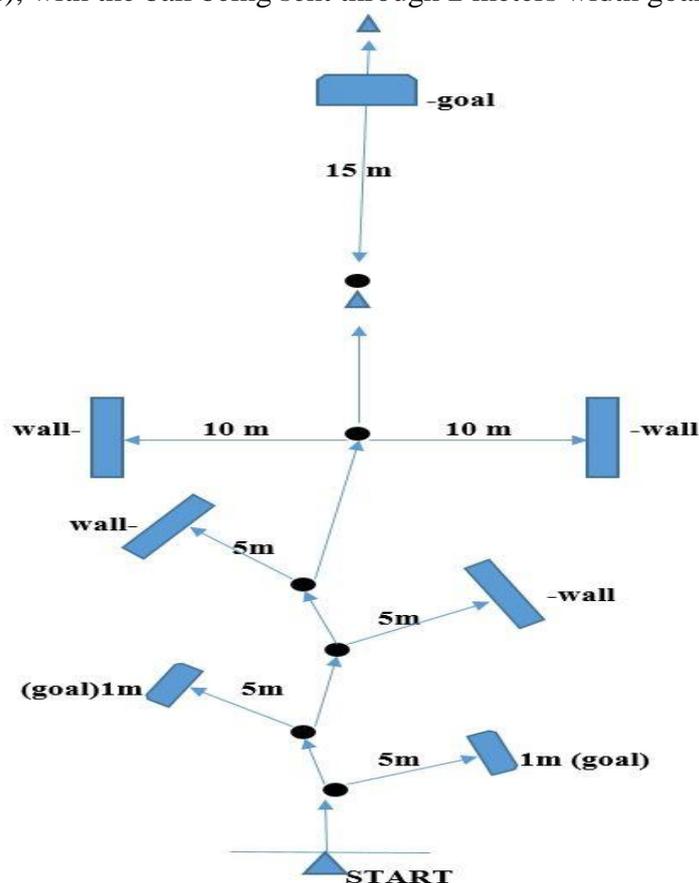


Fig. 1 – individual skill drill

4. Research methods

The *research methods* used were represented by: the study of literature, method of tests and measurements, statistical and mathematical method, graphical and comparative method. As statistical indicators we have chosen arithmetic mean, module and amplitude.

5. Results of the research and their discussion

Regarding the assessment of the subjects, we mention that the individual test was carried out through the drill, in which the subjects had to perform a total number of 20 passes, of them, counting the number of completed passes, but also a group testing consisting in a friendly game against the control group before the two-month training period and at the end of it, too. The individual results of the control group are presented in (table 1) and the results of the experiment group are presented in (table 2).

Table 1. Control group results at initial and final testing L.P.S. Piatra Neamț

Subjects	Completed passes/Total passes		Progress
	Initial testing	Final testing	
D.C.	12/20	14/20	+2
M.D.	15/20	17/20	+2
A.L.	14/20	15/20	+1
R.C.	15/20	19/20	+4
P.C.	13/20	17/20	+4
M.S.	13/20	18/20	+5
B.L.	12/20	16/20	+4
C.V.	12/20	15/20	+3
B.A.	11/20	15/20	+4
S.T.	14/20	15/20	+1
A.F.	11/20	15/20	+4
A.N.	10/20	13/20	+3
Arithmetic mean	12,66/20	15,75/20	-
Module	12	15	-
Amplitude	5	6	-

Specifically, regarding the progress of the control group (table 1), there were visible differences between its subjects since the initial testing, differences that have been maintained and become even more notable in the final testing, as proof being the increase in the amplitude value from 5 to 6. However, the progress of the team existed, this coming more due to the individual talent of the subjects and the individual technical training. We noticed this progress in the module values which increased from 12 to 15 as well as in arithmetic mean values that have changed from 12.66 to 15.75. Specifically, the success rate of the passes performed per group increased within the control group from 63.3% in the initial testing to 78.7% in final testing.

Table 2. Experiment group results at initial and final testing F.C. Ceahlăul Piatra Neamț

Subjects	Completed passes/Total passes		Progress
	Initial testing	Final testing	
D.C.	13/20	17/20	+4
M.D.	14/20	18/20	+4
A.L.	12/20	19/20	+7
R.C.	12/20	19/20	+7
P.C.	15/20	20/20	+5
M.S.	11/20	19/20	+8
B.L.	10/20	17/20	+7
C.V.	13/20	20/20	+7
B.A.	13/20	18/20	+5
S.T.	14/20	20/20	+6
A.F.	15/20	20/20	+5
A.N.	13/20	17/20	+4
Arithmetic mean	12,91/20	18,66/20	-
Module	13	20	-
Amplitude	5	3	-

Regarding the progress of the experiment group (table 2) in the individual technical tests, we have noticed a much more pronounced and even more uniform progress among the subjects. First of all, we say this because there was a decrease in the amplitude value from 5, in the initial test, to 3 in the final test. This means that the differences between the subject with the

lowest percentage of success and the subject with the highest percentage of success of the passes decreased between the two tests, indicating a uniform development of the group.

Also, the module's value increased by 7 units to a maximum value of 20, which means not only that there were subjects that had a maximum rate of completed passes, but also that there were many of them who did that. The positive evolution is also observed in the arithmetic mean of the group, which increased from 12.91 to 18.66 out of a maximum of 20. More specifically, regarding the success rate of the passes performed per group, it increased from 64.5% on initial testing, to 93.3% on final testing, representing an overwhelming increase. Regarding the results of the drill, we can see numerous changes regarding both teams subjects, between the results of their initial and final tests and also between the two teams as a whole.

At the same time, regarding the evaluation of the subjects in terms of a group (table 3), through the two friendly games between the control group and the experiment group, the first one at the beginning of the training period and the second one at the end of the experiment, we obtained the following data regarding the passes and dangerous actions created:

Table 3. Friendly match results

Friendly match	Control group			Experiment group		
	Initial	Final	Progress	Initial	Final	Progress
Total passes	194	212	18	204	232	28
Completed passes	165	181	16	176	211	35
Total attempts	11	14	3	13	20	7

We have noticed, following these two friendly games, a visibly improved evolution of the experiment group, in which it has created several dangerous occasions at the opposite goal. Also, the number of completed passes from the number of total passes was not only larger than the original game, but even closer to the number of total passes, which is a much better percentage of 90.9% versus 86.2%.

On the other hand, there was also an evolution in the control group, but lower than the one experienced by the experimental group and also with a less pronounced improvement in the final game compared to the initial verification game. Specifically, the percentage of completed passes from the number of total passes in the final game was 85.37% compared to the 85.05% success rate recorded in the first friendly match.

As a result of the research, we believe that junior "C", if undergoing an optimal training process for his age and psychomotor development level, can learn the correct biomechanics of positioning and passing the ball when it comes of passing the ball with flat foot whether it is with the favorite foot or the weaker foot. In fact, it is mentioned that „*a learning process which is structured according to “integrated” exercise favors the overall increase of the technical-coordinative factor*” (Giacomini, 2009).

6. Conclusions

Analyzing the data obtained after conducting the tests and after playing the friendly matches, we concluded that at the junior age, which is the prime moment in which the technique of the player is formed, it is very important to focus on improving the passing game with both feet and especially with the weaker foot.

Thus, following this research, we noticed significant improvements in the individual technique and the accuracy with which the subject passes the ball with the flat foot to fixed points or teammates. At the same time, the overall team performance has had a major improvement, the number of goal attempts created during a game being nearly 40% higher. The

success rate of completed passes also had a major improvement. We believe that junior C footballer must be able, through constant, systematic and integrated training, to use his weaker foot to pass the ball to short and medium distances to teammates who are in better positions, in order to have a higher number of goal attempts.

Thus, the *hypothesis* for this research that: passing the ball with both feet and especially with the weaker foot can be improved by a diverse range of exercises that are constantly practiced, *has been confirmed*.

List of references

1. Apolzan D., (2013) – *Fotbal. Tehnica jocului. O altă abordare*, Editura Rotech Pro, București, România;
2. Dumitrescu Gh., (2011) - *Antrenament Sportiv Fotbal - curs master*, Oradea;
3. Giacomini M., (2009). *Technical Guide for Football Schools* (in Romanian: *Ghid tehnic pentru școlile de fotbal*), 3rd Edition, FRF Romania translation;
4. Rață G., (2008) – *Educația fizică și metodică predării ei*, Editura Pim, Bacău, România, p. 16;
5. Stratton G., Reilly T., Williams A.M. & Richardson D.(2004). *Youth soccer-From Science to Performance*, Routledge, London;

BIOMECHANICAL MARKERS DYNAMICS IN QUALIFIED POWERLIFTERS UNDER THE INFLUENCE OF A POWER LOAD

Gavrilov Aleksej

Moscow State Academy of Physical Education,

Moscow, Russia

e-mail: mgafk1992@mail.ru

Abstract. The article presents the dynamics of correlation interrelations of biochemical markers with physical loads of power directivity.

Key words: biochemical markers, load of power directivity, powerlifting, current control

The aim of the study is to improve the effectiveness of the current monitoring of training impacts.

The problem of the research. Physical strength is the ability of an athlete to overcome external resistance or resist it through muscular effort, so the sports achievements of a powerlifter are directly dependent on factors that limit the ability of his muscular system. These factors can be relieved from overload without adequate and adequate recovery, which has a negative impact on the health of athletes.

The relevance of research. The search for an adequate system for the current monitoring of the muscular system of athletes as a basis for the correction of training loads in powerlifters is one of the most actual, yet unresolved problems in the theory and practice of training athletes, which is of great importance in coaching.

Hypothesis. It is assumed that the use of informative biochemical control markers in the current monitoring system in power lifting will allow to make the necessary correction in the volume and intensity of the physical load of the power directivity

In connection with the **indicated goal**, the task of this study was to identify the interrelationships between the magnitude of the force load of the force and the dynamics of biochemical indicators.

Organization of the study. The study was conducted at the special preparatory stage of the training of 12 qualified airtlifters in preparation for the open Moscow Cup of 2015.

Methods of research: pedagogical control of physical loading, analysis of the dynamics of biochemical markers.

When analyzing the special literature, it was found that the concentration of urea in the blood testifies to the increased protein catabolism and is actively used in sports practice as a marker of overtraining – [TM]. Nikulin, 2011].

However, according to the results of subsequent studies [D. Nelson, M. Cox, 2014], the flow of nitrogen through the urea cycle varies depending on the amount taken and the composition of the food.

When consuming protein-rich foods, the carbon skeletons of amino acids are used to generate energy and form a large amount of urea from the remaining amino groups.

The formation of urea also increases significantly during fasting, when the cleavage of muscle proteins begins to maintain the metabolic energy of the body.

In this paper, we present the results of an analysis of the dynamics of the correlation interrelations of biochemical markers with the volume of physical loading of the power directivity, as well as the consumption of protein with food.

Table 1. The relationship between the volume of the force load and the concentration of urea in the blood. [Reference values 2.10-7.10 mmol / liter]

Microcycle`s number	The volume of the training load		The average intensity	The concentration of the urea
	kg	The amount of bar lifting		
I	38956	268	145	8.10
II	42469	243	174	8.00
III	36715	265	138	8.00
IV	41328	223	185	6.40

The correlation coefficient of the two samples was 0.005.

The marker has an extremely low correlation with the dynamics of the load, so its use as an indicator of the current state of the athlete is unreasonable.

Also, to determine the sensitivity of this marker to factors independent of the degree of exercise, an analysis was made of the correlation between protein intake and urea concentration in the blood.

Table 2. Proportion of protein intake in food with urea concentration in the blood. [Reference values 2.10-7.10 mmol / liter]

Average protein consuming	The concentration of the urea
200	8.10
185	8.00
170	8.00
150	6.40

The correlation coefficient of these indicators was 0.834.

Thus, the marker is highly interrelated with the volume of protein intake in food, therefore we consider it undesirable to use this indicator as a marker of current control of the load of the power directivity.

The following marker of biochemical changes used by us is tissue enzymes lactate dehydrogenase and creatine kinase, which, under various functional conditions, enter the bloodstream from skeletal muscles.

An increase in the blood of indicator enzymes is associated with a violation of the permeability of cellular tissue membranes and can be used for biochemical monitoring of the current state of the athlete.

This fact reflects the adaptation of the athlete's body to a high-intensity FN [N. N. Yakovleva. 1974 p.338].

Table 3. The ratio of the volume of the load of power directivity to the concentration of lactate dehydrogenase.

[Reference Values of 208-378 mmol / liter]

Microcycle`s number	The volume of the training load		The average intensity	The concentration of the Lactate dehydrogenase
	kg	The amount of bar lifting		
I	38956	268	145	360
II	42469	243	174	392
III	36715	265	138	411
IV	41328	223	185	555

The correlation coefficient of the volume of the training load of the power directivity with this marker was: 0.695187.

Thus, according to the results of our study, the above marker has a fairly high degree of reaction to the training measures used by us.

However, the values of the marker in P, III, IV microcycles exceed the upper limit of the reference values.

In this case, in the I microcycle with the load value exceeding the value of the III microcycle, the values of the marker fall to the upper boundary of the reference values.

Table 4. The ratio of the volume of training load with the concentration of creatine kinase in the blood. [Reference Values 0.0-171 mmole / liter]

Microcycle`s number	The volume of the training load		The average intensity	The concentration of the creatine kinase
	kg	The amount of bar lifting		
I	38956	268	145	254
II	42469	243	174	380
III	36715	265	138	319
IV	41328	223	185	423

Based on the results of calculations, the correlation coefficient between the volume of training load and the concentration of creatine kinase in the blood was: 0.887.

Thus, all the oscillations of the marker occur outside the upper limits of the reference values and have a high sensitivity to the dynamics of the load.

Table 5. The ratio of the volume of training load and concentration of troponin. [Reference marker values of 0.0-0.16ng / mole]

Microcycle`s number	The volume of the training load		The average intensity	The concentration of the troponin
	kg	The amount of bar lifting		
I	38956	268	145	0,930
II	42469	243	174	0,932
III	36715	265	138	0,929
IV	41328	223	185	0,934

Coefficient of correlation: 0.833.

Despite the high correlation coefficient, the dynamics of the marker occurs in thousandths, which makes it very difficult to apply the given marker for current monitoring.

Table 6. The ratio of the volume of training load with the concentration of myoglobin in the blood. [Reference values 23-72 ng / mol]

Microcycle`s number	The volume of the training load		The average intensity	The concentration of the
	kg	The amount of bar lifting		
I	38956	268	145	78
II	42469	243	174	87
III	36715	265	138	66
IV	41328	223	185	91

Coefficient of correlation: 0.9310.

The investigated marker varies in proportion to the dynamics of the load being fulfilled and can be considered highly informative.

Based on the results obtained, the following conclusions are drawn:

- A sample of urea concentration in the blood is not informative for controlling physical effects:

- the concentration of tissue enzymes has a high correlation coefficient and can be informative;

-myoglobin concentration also has a high correlation with the actual load and can be considered informative for determining the amount of physical impact;

- The dynamics of troponin concentration is measured in thousandths, which makes it very difficult to use it as a marker of the current state of the athlete

Literature

1. Biochemistry. Textbook for institutes of physical culture. Ed. N.N. Yakovleva. Second edition. Correction. And additional. Moscow. "Physical culture and sports", 1974 p.338

2. Nikulin, B.A. Biochemical control in sports: scientific-method, manual / II Rodionova. BA Nikulin .- M.: Soviet Sport, 2011 .- ISBN 978-5-9718-0484-0.

3. Fundamentals of Biogeochemistry of Leninhz: T.2: Bioenergetics and Metabolism / D. Nelson, M. Cox; Per. With the English-M: BINOM. Laboratory of Knowledge, 2014-261 p.

STUDY ON THE DEVELOPMENT OF QUALITY DRIVING FORCE OF III LEVEL SWIMMERS

Gheorghe Marian Ciprian
National University of Physical Education and Sports (NUPES)
Bucharest, Romania
Email: gheorghe.marian.ciprian@gmail.com

Abstract. The purpose of this paper is to develop the strength of the muscles involved both in the specific and nonspecific effort and to improve the swimming time for certain distance, at level III swimmers.

The subjects participating at our study were 12 junior swimmers aged 10-12 years old, legitimated at "Contratimp Sports Club".

The research methods used in this study were: the bibliographical study method, the observation method, the mathematical and statistical method, the graphical representation method and the experimental method.

All athletes participating in this study had visible progress between the initial and final testing due process of preparing attended daily, but the experimental group performed better.

1. Introduction. Swimming represents an activity developed since antiquity which appeared from the necessity of beings to displace through aquatic environment, especially because of the fires, or to procure food.

Ancient world appreciate this activity since the beginnings of the time, progressively evolving due to the benefits brought to health and commercial procurement.

The federations which regulate competitive activity developed in the sport branch it's named FINA (Federation Internationale de Natation).

2. Purpose. The purpose of this paper is to develop the strength of the muscles involved both in the specific and nonspecific effort and to improve the swimming time for certain distance, at level III swimmers.

3. Tasks

The tasks of this study were:

- To study the specialized literature
- Composing a pattern of subjects
- Initial testing
- To apply the preparing plan
- Final testing
- Processing and interpretation of dates
- Elaborate the conclusions

4. Research methods

The research methods used in this study were: the bibliographical study method, the observation method, the mathematical and statistical method, the graphical representation method and the experimental method.

5. Results of the research and their discussion

Present in Table 1, the Pearson correlation for the tests carried out on dry samples carried out in water, made the control group:

Table 1 - results after applying the Pearson correlation coefficient, the final testing of the control group samples conducted tests carried out on land and in water.

Probably Related	Sample Which Correlates	Statistical Result
25m crawl feet	lying back, lifting set and temper - how many more reps execution in a time of 30s	0,886
25m crawl feet	staying away, hands behind your head, squat and return passage - how many more reps execution in a time of 30s	0,260
50m crawl	Front support, bending arms and return - how many more reps execution in a time of 30s	0,233
50m crawl	lying back, lifting set and temper - how many more reps execution in a time of 30s	0,312
50m crawl	staying away, hands behind your head, squat and return passage - how many more reps execution in a time of 30s	0,697
50m backstroke	Front support, bending arms and return - how many more reps execution in a time of 30s	0,290
50m backstroke	lying back, lifting set and temper - how many more reps execution in a time of 30s	0,002
50m backstroke	staying away, hands behind your head, squat and return passage - how many more reps execution in a time of 30s	0,424

We note in Table 1 that the statistical analysis revealed an association in between the samples' cover the distance of 25 m in a short time, the stamp crawl with hands up "and" down back, lifting the set and reset - execution how many more reps at a time of 30s ".

Also, a combination substantial be found both between the samples' cover the distance of 50 m in a short time by means of the process of swimming crawl "and" standing away, the hands of the neck, crossing the squat and temper - execution of how many more repeats a period of 30s ".

A moderate association observed both between the samples' cover the distance of 50 m in a short time by means of the process of swimming crawl "and" down back, lifting the set and temper - execution of how many more repetitions in a period of 30s " and between samples "covering the distance of 50 m in a short time through the process of swimming back" and "staying away, hands behind your head, crossing the squat and return - execution how many more reps in a period 30s ".

We note that other correlations obtained samples were low or negligible.

Present in Table 2, the Pearson correlation for the dry samples and samples carried out carried out in water, the experimental group performed by:

Table 2 - Results obtained after application of the Pearson correlation coefficient, the final testing of the experimental group samples conducted tests carried out on land and in water.

Probably Related	Sample Which Correlates	Statistical Result
25m crawl feet	lying back, lifting set and temper - how many more reps execution in a time of 30s	0,486

25m crawl feet	staying away, hands behind your head, squat and return passage - how many more reps execution in a time of 30s	0,529
50m crawl	Front support, bending arms and return - how many more reps execution in a time of 30s	0,808
50m crawl	lying back, lifting set and temper - how many more reps execution in a time of 30	0,668
50m crawl	staying away, hands behind your head, squat and return passage - how many more reps execution in a time of 30s	0,825
50m backstroke	Front support, bending arms and return - how many more reps execution in a time of 30s	0,402
50m backstroke	lying back, lifting set and temper - how many more reps execution in a time of 30s	0,821
50m backstroke	staying away, hands behind your head, squat and return passage - how many more reps execution in a time of 30s	0,597

We observe in Table 2 that the statistical analysis revealed an association in between the samples' cover the distance of 50 m in a short time by means of the process of swimming crawl "and" support face, the bending of the arms and return - the execution of how many May many repetitions at a time of 30s ", " covering the distance of 50 m in a short time through the process of swimming crawl "and" staying away, hands behind your head, crossing the squat and return - execution how many more reps over a period of 30 seconds ", and between the samples' cover the distance of 50 m in a short time by means of the process of swimming back" and "down back, lifting the set and temper - how many more repeats execution into a period of 30s ".

Also, an association substantial is found between the samples "covering the distance of 25 m in a short time by beating feet crawl with hands up" and "staying away, hands behind your head, crossing the squat and return - Execution how many more repetitions at a time of 30s ", " covering the distance of 50 m in a short time through the process of swimming crawl "and" lay back, lifting set and return - execution how many more reps in a 30s period "and between" covering the distance of 50 m in a short time through the process of swimming back "and" staying away, hands behind your head, squat and return passage - how many more reps into execution a period of 30s ".

A moderate association observed both between the samples "covering the distance of 25 m in a short time by beating feet crawl with hands up" and "down back, lifting set and return - Execution how many more reps at a time 30 seconds ", and among samples' cover the distance of 50 m in a short time by means of the process of swimming back" and "support face, the bending of the arms and return - the execution of how many more repetitions in a period of 30s".

Please note that, unlike the control group, the experimental group did not obtain as a result of the analysis using the Pearson correlation coefficient, or correlation results with low or negligible level.

6. Conclusions

The literature offers a wide variety of notions regarding education quality driving force in accordance with the peculiarities of growth and development of children.

All athletes participating in this study had visible progress between the initial and final testing due process of preparing attended daily, but the experimental group performed better. We can say therefore that the training plan applied experimental group was an effective one.

The control group was recorded by statistical analysis using the test Pearson correlation, combinations substantial differences between the samples' cover the distance of 50 m in a short time by means of the process of swimming crawl "and" standing away, the hands of the neck, crossing the squat and recovery - how many more reps execution in a time of 30s ".

Unlike control group, which received low or negligible correlations at the four new samples, the experimental group did not obtain to none.

The hypothesis that the application of a specific force development plan and nonspecific land and water, on a group of swimmers third level lead to improved muscle strength and improve the general and specific lengthening of swimming time is confirmed.

Bibliography

1. Bocioacă, L., 2008. Dezvoltarea calităților motrice, Ed. Moroșan, București
2. Demeter, A., 1974. Bazele fiziologice ale educației fizice școlare, Ed. Stadion, București
3. Demeter, A., 1981. Bazele fiziologice și biochimice ale calităților fizice, Ed. Sport-Turism, București
4. Epuran, M., 1992. Metodologia cercetării activităților corporale, Ed. ANEF, București
5. Gagea, A., 2010. Tratat de cercetare științifică în educație fizică și sport, Ed. Discobolul, București
6. Ifrim, M., 1986. Antropologie motrică, Ed. Științifică și Enciclopedică, București
7. Kenney, W., L., Wilmore, J. H., Costill, D., L., 2012. Physiology of sport and exercise, Ed. Human Kinetics, Champaign
8. Maglischo, E., W., 1993. Swimming even faster, Ed. Mayfield Publishing Company, California
9. Marinescu, Gh., 2003. Natație efort și antrenament, Ed. Bren, București
10. Niculescu, M., 2002. Metodologia cercetării științifice în educație fizică și sport, Ed. ANEFS, București
11. Păunescu, M., 2013. Metode de cercetare științifică, Ed. Discobolul, București
12. Popa, M., 2008. Statistică psihologică și prelucrarea computerizată a datelor, Ed. CREDIS, București
13. Predescu, C., Popescu, A., D., 2010. Fiziologia efortului la copii și juniori, Ed. Discobolul, București
14. Sion, G., 2007. Psihologia vârstelor, Ed. Fundației Române de Mâine, București
15. Șchiopu, U., 1997. Psihologia vârstelor – Ciclurile vieții, Ed. Didactică și Pedagogică, R. A., București
16. Vasile, L., 2009. Metodica antrenamentului pe ramură de sport, Ed. Moroșan, București
17. Verza, E., 1993. Psihologia vârstelor, Ed. Hyperion, București

MODEL CHARACTERISTICS SPORTS- TECHNIQUE INDICATORS FREE PROGRAMS YOUNG SINGLE SKATERS

*Layzan K.D.,
Siberian State University of Physical Education and Sports
Omsk, Russian Federation
e-mail: lkd94@mail.ru
Coordinator: Gorskaya, I.Y*

Abstract. The article is devoted determination of model characteristics of free programs to achieve sports performance in single figure skating, taking into account new trends in the execution of competitive programs. The developed model characteristics on the basis of sports and technique indicators skaters with different levels of sports performance. The article have practical implications for practice: figure skating, optimization of training process in sports schools and Olympic reserve schools.

Keywords. Model characteristics, sports- technique indicators, components of competitive programs, Figure skating, free programs.

Introduction. In improvement of sports mastery participating in competitions plays significant role, in which successful performance is achieved by means of realization of complexity of technique elements which are performed by athletes and properly designed competitive programs.

Requirements applicable to modern figure skating dictate changes in main aspects of single skating: a step sequence, a spin, a jump, a jump+jump, and a jump combination. High-quality execution **of the element with added complexity allowed by ISU** rules can promote the **growth of base mark** of each sports-technique element [2, 3].

In addition to increasing of complexity of realization of technique elements, there has been observed **enlargement** of the evaluation items of short and free skating young single skaters: skating mastery, moves in the field and a composition. Single skating free program consists of prescribed elements and selected jump elements, **in the execution** of complex jumps in the second part of the program a sportsman get loyalty points [5, 7].

Supplied changes in athletic activities of figure skaters lead to change of the value of free program model characteristics, achievement of which will promote successful competitive activities. For effective implementation of supplied model characteristics, it is necessary to realize them in complex combination with biomedical control, analysis and correction of physical, functional and technique preparedness of young figure skaters [1, 4, 8].

In view of the above consideration, development and timely correction of the model characteristics of free program indicators in single figure skating are important subject of sport science in accordance with requirements of execution of special technique elements and components **of program's mark**.

The purpose of research is to determine the model characteristics of sports-technique indicators and components of free programs young single skaters.

Research methods are the evaluation of realization of technique elements: jumps, spins, a step sequence and sum of the elements; the evaluation of free program components: the skating mastery, moves in the field, the performance, the composition, interpretation and the sum of the components. Mathematical treatment of the results is performed with the use of IBM SPSS Statistics 22 programme.

The organization of research. The research was conducted on the base of faculty of science of Siberian State University of Physical Education and Sports and Specialized Children and Youth Sports School of the Olympic Reserve № 35, Ice **Stadium named after I.K.**

Rodnina, Omsk. Observation of sports-technique indicators of young figure skaters is performed with the use of videotape recordings of execution of free programs, the detalization of programs, the official records of 2017 World Junior Figure Skating Championships in Taipei. Study population: 24 sportswomen, qualified according to the results of short program, the age of subjects is 13-16 years old.

The results of the research and its consideration.

Following on from the results of the analysis of the performance of young figure skaters, the model characteristics for medalists, leaders and outsiders of the tournament were developed (Table 1).

Table 1

Model characteristics of sports-technique indicators of young figure skaters according the results of free program

№	Indicators	Medalists	Leaders	Outsiders
Technique elements				
1	Jumps	54,61 ± 3,437* ^o	39,73 ± 5,542* [^]	28,24 ± 5,230 ^{o^}
2	Spins	11,94 ± 0,474* ^o	10,46 ± 0,876* [^]	9,85 ± 1,869 ^{o^}
3	Step sequence	4,85 ± 0,600* ^o	3,95 ± 0,510* [^]	2,95 ± 0,656 ^{o^}
4	Sum of the elements	71,40 ± 4,102* ^o	54,14 ± 4,655* [^]	41,04 ± 5,479 ^{o^}
Components of program				
5	Skating skills	7,77 ± 0,176* ^o	6,64 ± 0,573* [^]	5,45 ± 0,509 ^{o^}
6	Transition	7,47 ± 0,127* ^o	6,16 ± 0,578* [^]	4,98 ± 0,505 ^{o^}
7	Performance	7,77 ± 0,184* ^o	6,31 ± 0,408* [^]	5,24 ± 0,504 ^{o^}
8	Choreography	7,71 ± 0,198* ^o	6,50 ± 0,571* [^]	5,37 ± 0,516 ^{o^}
9	Interpretation	7,79 ± 0,215* ^o	6,52 ± 0,646* [^]	5,30 ± 0,517 ^{o^}
10	Sum of components	38,51 ± 0,850* ^o	32,13 ± 2,652* [^]	26,34 ± 2,507 ^{o^}

* – difference between indicators of the medalists and the leaders are significant under $p < 0,05$;

^o – difference between indicators of the medalists and the outsiders are significant under $p < 0,05$;

[^] – difference between indicators of the leaders and the outsiders are significant under $p < 0,05$.

Significant differences ($p < 0,05$) between indicators of single figure skaters were detected according to characteristics of sports-technique elements and components of free program, taking into account the complexity factor.

According to the criteria of technique elements and all characteristics of free program taking into account the successfulness of the performing of the competitive program, the leaders of the tournament had the highest values while performing jumps, spins and step sequence. Therefore, there has been observed the consistent pattern: the higher level of complexity of technique elements: jumps, spins, step sequence, body movement while performing elements, the higher total sportive result.

Technique and functional training of young figure skaters should be conducted according to the new structure and content of competitive programs, which excel at increased complexity.

Conclusion. As can be seen from the above, has been discovered that the medalists have higher values of characteristics, which characterize the complexity of competitive program. Possession of the information about values of given model characteristics of indicators of free program of young figure skaters taking into account change of evaluation for the performance of the main technique elements and the components of the program makes possible to make the process of training more effective, both according to use of differentiated approach, and realization of individual programs, improvement of sports mastery taking into account new tendencies of competitive activities.

Developed model characteristics should be taken into account for composition of free program with allowances made for the complexity factor for achieving high results. In spite of authenticity of the research results, trainers should from time to time correct programs of sportsmen in the event of changes in evaluation of technique elements of competitive programs.

Bibliography

1. Vardanyan, A. N. The influence of psychological preparation on the result of competitive activity in figure skating / A. N. Vardanyan, V. F. SOPs, A. V. Shakirov // the Sport psychologist. - 2015. - № 4 (39). - P. 50-53.
2. Volkov K. S., Karnaukhov, G. Z. Analysis of physical and technical preparedness of young skaters // the Development of modern education: theory, methodology and practice. 2016. No. 1 (7). P. 254-258.
3. Kondakov, A. A. Professional training in figure skating based on the simulation of competitive programs :Avtoref. dis. Cand. PED. Sciences / A. A. Kondakov. – M., 2011. - 23 p.
4. Kudryavtseva O. V., Belyaev V. S., Palomino M. V., Kaymin M. A., Savin M. V. Optimization of planning of technical training single skaters in the annual cycle in the training groups // Physical culture: upbringing, education, training. 2015. No. 5. P. 38-41.
5. The Lhagvasuren, N. Model characteristics of athletes of high level / G. N. The Lhagvasuren, S. bat-Erdene, A. Lhagvasuren // scientific notes University. P. F. Lesgaft. - 2015. - № 4 (122). - S. 109-113.
6. Mishin A. N., Shapiro V. A., O. A. Chepurov the Principle of formation of basic model characteristics in multi-hops skater // Education and training: theory, methodology and practice : proceedings of the VIII Intern. scientific.-pract. Conf. 2016. P. 334-342.
7. 7. Paramonova N. A. Melekhin A. P., Tokareva I. B. Effectiveness of the use of lead exercises in mastering the basic elements of the slide on the stage of initial training figure skaters // journal of Applied sports science. 2015. No. 1. 31-37.
8. Flanco I. P., Prieshkina A. N., Fomenko A. A. physical activity and the health of schoolchildren : monograph.Saarbrucken :LAP LAMBERT, 2013. 109 c.

DEVELOPING MOBILITY OF CHILD SWIMMERS

Severin Alina,
National University of Physical Education and Sports (NUPES)
Bucharest, Romania
Email: alyna_md@gmail.com

Preparing for high performance swimming starts at a young age. This must be based on the Education Specialists' recommendations regarding motor skills, as well as learning, consolidation and improvement of motor acquiresments, etc., in close connection with the particularities of the young swimmers' growth and development. The paper aims to highlight the development of 9 to 10 year-old athletes' mobility after they have completed an exercise program designed by us. The study was realized by a random selection of 17 child swimmers (7 girls and 10 boys).

Their mobility was measured by using four standard tests. The mobility exercises proposed by us lasted four months (November2016 to February 2017), being practiced within the training 3 times per week. The subjects have been examined before and after the training. The final results were interpreted using Wilcoxon. The values were calculated on the basis of the negative indices T (-). The results for each test were: -21, -15, -22, -17.5. Therefore, the calculated values < tabular critical value (35) for N = 17, and (significance threshold) (p=0,05), which confirms the research hypothesis. In conclusion, the statistics show that the proposed and the applied exercise program had developed for child swimmers' mobility.

Keywords: mobility, development, children, swimming.

1. Introduction

Specialists define mobility as the body's ability to achieve and perform motor movements with a large amplitude (Vasile, 2009). This motor capacity defines the quality and success of the movement by the degree of articulation amplitude (Ylinen, 2009, p.3).

The swimming performance requires the presence of a good joint mobility because its presence maximizes it. This conditions the correct and efficient execution of the performance technique and motor skills and abilities that improve the time performance.

The mobility is conditioned by the capacity of the nervous system to coordinate neuromuscular processes. Also, the mobility is influenced by internal factors (structural factors – the joint capsule and the connective tissue (Ylinen, 2009 p.11), elasticity of the ligaments, tendons and muscles, muscle tone), but also external factors (temperature, time of day when exercise is recommended), fatigue, age, sex, etc. which put their mark on the level of education. Mobility can be developed according to sportsmen's individual traits through active and passive exercises with hetero-manipulation and stretching exercises (Dragnea and Bota, 1999, p.240, Tudor, 2005, p.120, 1999, p.105, Vasile, 2009, p.201).

The studies of Kinser and Ramsey (2007) demonstrated that stretching exercises are „one of the most efficient means of mobility development and suppleness with important benefits to the components of the muscular system and sport performance”. Furthermore, Bricoutp (2007) and Ylinen (2009) demonstrated that „early and regular development of the suppleness and articular mobility will bring high benefits to sportsmen throughout their sporting careers”.

2. Materials and methods

Purpose: the current study seeks to identify the most efficient methods that can be used for the development of 9 years old child swimmers' mobility as well as the highlighting of its importance as a psychometric quality at a performance level.

Hypothesis: the identification of means to develop the mobility for 9 years old swimmers and the creation of an exercise program adapted to the age and the sportsmen's levels can determine a significant mobility development.

Participants' characteristics: the study was carried out on 17 child swimmers that were 9 years old – 7 girls and 10 boys. They practice swimming at the sports club of the „Emil Racovita National College”, where they are students in the 3rd grade. According to the training program, they have three swimming training sessions per week, one hour and thirty minutes each.

Performed tests: for the study we used four tests which allowed us to evaluate the mobility of the spine, coxofemoral and scapulohumeral joints. These were applied at the start and at the end of the exercises (after the execution of the exercise program proposed by us). The obtained results were represented graphically to differentiate sportsmen's mobility before



Fig.1. The test of the flexibility of the spine mobility test



Fig.2. The shoulder

and after the training sessions in order to observe if there are moments of stagnation, stabilization or regression registered in participants.

The data was interpreted statistically by using the Wilcoxon test which allows us to approve/negate the null or the paper hypothesis. By the significance threshold where $p=0,05$, we verify also the confidence in the test threshold that confirms also the success of the tests proposed for the evaluation.

The test of the flexibility of the spine (Tudor, 2005)

Standing close, with the legs wide open and relaxed, the toes catching the edge of the bank, the athlete bends their torso forward, pushes the chin to the chest while trying to overcome with his fingers the tip of his feet. The distance between the tips of the fingers and the edge of the bank is measured with a metric band and expressed in centimeters. This test is aimed to evaluate the mobility of the spine and of the coxofemoral joint (Fig. 1).

The shoulder mobility test(Fig.2)

This test (Fig.2) assesses the mobility of the shoulder joint. The test is realized with the help of a non-elastic band. The athlete performs the lifting of the arms upward, followed by lowering them backwards. The closer the hands are to the string, the better is the athlete's mobility in the shoulder joint. The distance between the swimmer's hands in the final position is measured and recorded. The test is repeated three times, and the shortest distance is recorded.

The mobility of the spine test(Fig.3)

This test is a more complex evaluation of the mobility because it includes the spine, the coxofemoral joints, requiring the elasticity of the rear musculature of the lower train. The test is executed sitting wide, legs extended and relaxed and arms forward. The swimmer bends forward and tries to get as close as possible to the ground. Using a metric band, we measure the distance from the heel line, underlined with a marker, to the tip of the fingers. The athlete executes the test three times and the highest score is recorded.



Fig.3. The mobility of the spine test



Fig.4.

The shoulders flexibility test(Fig.4)

The test is carried out standing wide while the athlete is holding their hands back with one arm up and the other down. The tips of the fingers overlap and the distance between the two index fingers is measured using the metric band. If the fingers overlap the result is registered with a „+”, but a large distance between the fingers is recorded with „-” values. Only one test is run and the results are recorded. This test evaluates the shoulder mobility. It was executed only for skillful hands.

3.Intervention programs

The swimmers were evaluated using the tests mentioned previously, in November 2016. After that, for a 4-month period the athletes executed the exercise program proposed by us. The program was executed every session in the warming-up part of the training that was executed on dry land. The final testing was done in February 2017, carried out with the same style.

The exercise program was adapted to the level and age of the athletes. Every month, we aimed to achieve a primary and a secondary goal (see Table 1) that aimed to educate the mobility for different joints. We have been interested in developing and maintaining the attained level by using various exercises to eliminate monotony and to increase the interest of children in the exercises they have to do.

Table 1. *Duration and objectives of the exercise program*

Month	November				December				January				February			
Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Objective	Test	Develop general mobility			Developing mobility of the scapulohumeral spine and the spine				Dezvoltarea mobilității articulare coxofemorale și coloanei vertebrale.				The development of coxofemoral, spine, scapulohumeral mobility by complex exercises.			Test

4.Results: the obtained results for each test are graphically represented and are interpreted statistically to obtain the level of trust in the test and confirms or negates the research hypothesis

4.1 The spine flexibility test: the results of the “flexibility test” are significantly positive, showing higher values in the final tests. The results of articular mobility of the spine were calculated based on the negative T (-) indices (rank 1 was assigned to the lowest value). The test value for the experimental group is $(T-) = -21$. Since the calculated value of the test (-21) is less than the critical table value (35), for $N = 17$ and $p = 0,05$, it confirms the existence of a significant difference in joint mobility of the final spine flexibility test where $Me = 7$, by comparison with the initial ($Me = 3$) and cancels the null hypothesis, confirming the research hypothesis for the given test.

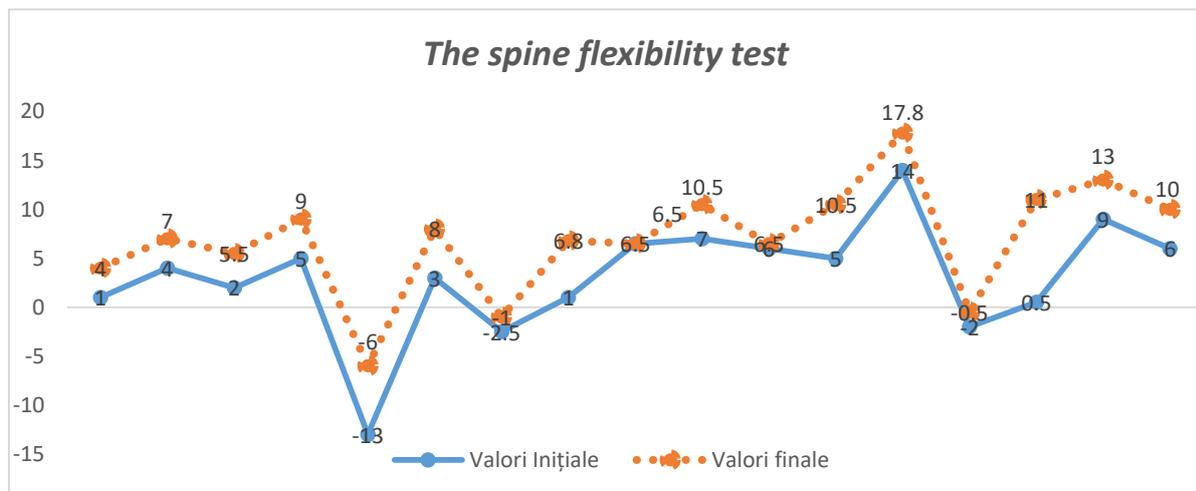


Fig.5. Chart of the spine flexibility test.

4.2 The shoulder mobility test:

The results of the test show a moderate positive growth from the initial mobility, confirmed by the median calculated at the initial moment: $Me = 44$, and at the completion of the program: $Me = 50$.

The mobility of the scapulohumeral joint was calculated on the basis of negative indices (T-), so the calculated test value is $T(-) = -15$, and is less than the critical table value for $N = 17$ and $p = 0,05$. Consequently, the null hypothesis is negated and the existence of a significant mobility development after the application of the program according to the research hypothesis is confirmed.

4.3. The spine mobility test

This test also confirms a growth of the spine mobility by calculating the final median $Me = 7.5$ which is greater than the initial median $Me = 4$. The mobility value is calculated by negative $T(-) = -22$ and is less than the critical table value for $N = 17$ and $p = 0.05$. Under this statistical report the null hypothesis is negated accepting the research hypothesis.

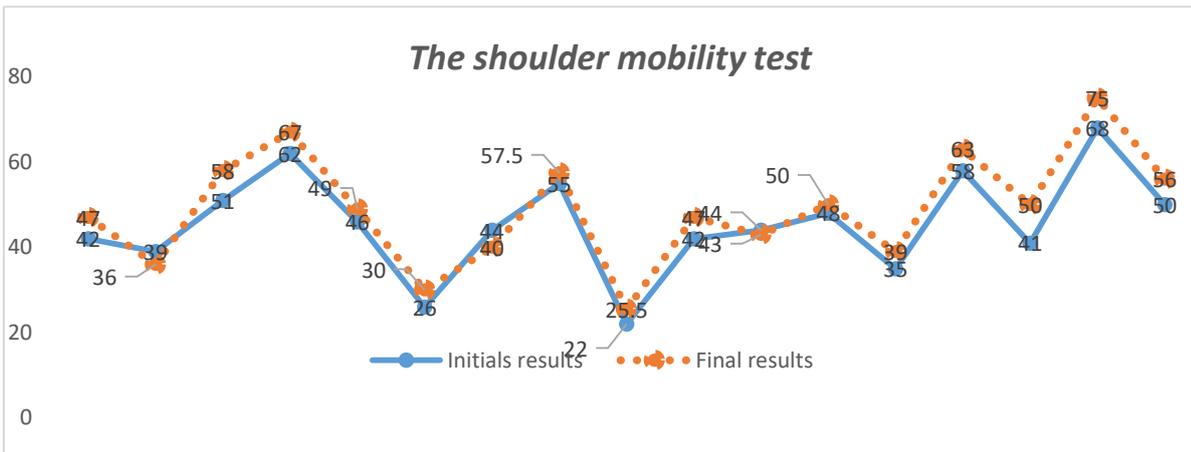


Fig.6. Chart of the shoulder mobility test

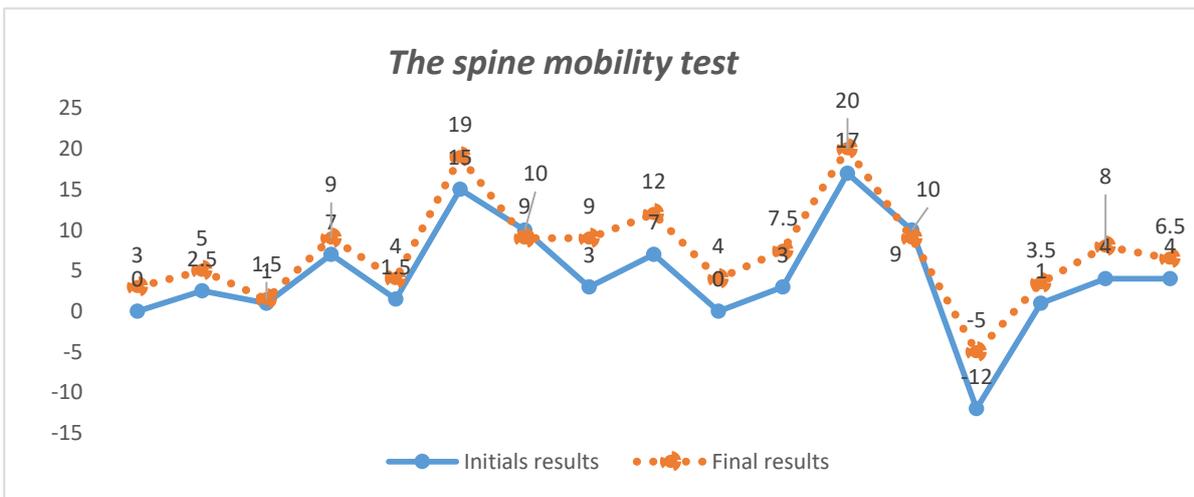
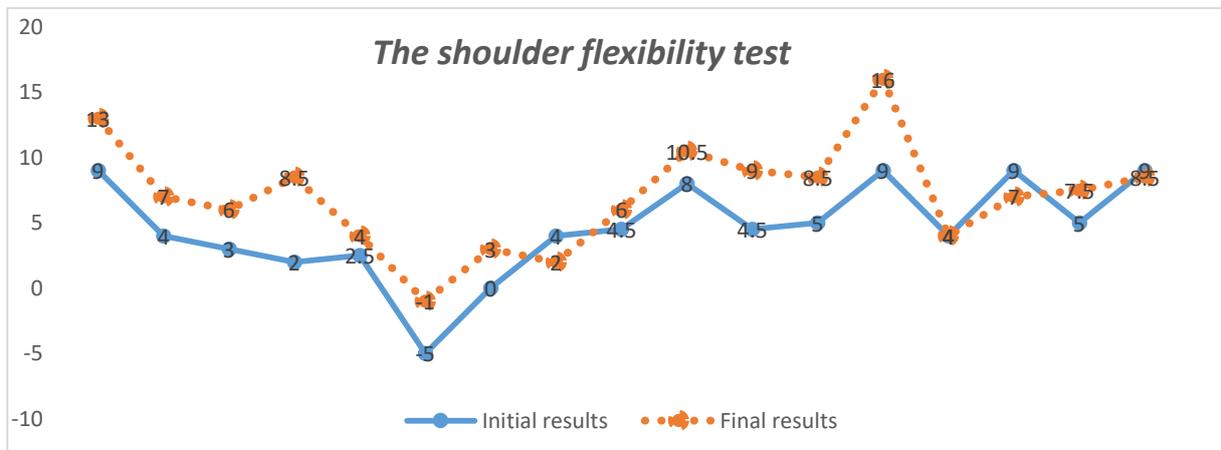


Fig.7. Chart of the spine mobility test.

4.4 The shoulder flexibility test

By identifying the median at the final testing: $Me = 7$ compared to the initial one: $Me = 4$, there is a slight development of mobility at the scapulohumeral joint. The mobility value was calculated on the basis of negative indices $T (-) = -17.5$ and is smaller than the critical tabelar



value (35), for $N = 17$ and $p = 0.05$, which denies the null hypothesis and confirms the research hypothesis from a statistical point of view. By confirming the hypothesis with Wilcoxon's statistical test, we endorse the confidence in the proposed tests which are effective in detecting

a significant difference between the initial and final results by increasing and developing the articular mobility of athletes.

5. Discussions and conclusions

The development of an exercise program for educating mobility, tailored to the specifics and needs of 9 years-olds, determines the development of the joint mobility that positively influences sport performance by improving swimming-specific techniques and by improving the swimming time. The results obtained by the little swimmers at the final testing demonstrated that a well-structured exercise program, adapted to the specifics (Yliene, 2009) and the skills of the children, determine the education of the mobility. The applied program must be systematically executed by athletes so that the indices obtained are maintained or improved.

The results obtained on the applied tests confirmed the hypothesis of the study. Thus, identifying the means of developing mobility for 9-years-old swimmers and creating an exercise program adapted to the age and level of the athletes, can lead to a significant development of the mobility of the large joints involved in the execution of the specific swimming techniques. We recognize that the limits of our research are represented by: the type of athletes (gender, age, and workout attendance), the physical and mental state of the participants during testing (fatigue, emotional-motivational factors), the social environment and the distinct features of the studied sport. In another context, we want to mention that this research can be an open theme, subjected to perfection, and also a challenge for specialists in this field, as it can be revised and expanded.

References:

1. Bricout, V., A. (2007). Les Connaissances de Physiologie de l'Enfant au Service de l'Enseignement de l'EPS a l'Ecole Primaire. http://www.ac-grenoble.fr/eps1/IMG/Interets_de_la_PHYSIOLOGIE_3.pdf
2. Dragnea, A., Bota, A. (1999). *Teoria activităților motrice*. București: Editura Didactică și Pedagogică.
3. Kinser, A., M., Ramsey, M., W. (2007). Vibration and stretching effects on Flexibility and Explosive Strength in young gymnasts. *Medicine & Science in Sport & Exercise*, Avril 2007.
4. *Static Flexibility Test*. <https://www.brianmac.co.uk/flextest4.htm>
5. *Shoulder reach flexibility test*. <http://www.topendsports.com/testing/tests/shoulder-flexibility.htm>
6. Tudor, V. (2005). *Măsurare și evaluare în cultură fizică și sport*. București : Editura Alpha MDN .
7. Tudor, V. (1999). *Capacitățile condiționale coordinative și intermediare – componente ale capacității motrice*, București: Editura RAI Coresi.
8. Vasile, L. (2009). *Înot - metodică antrenamentului pe ramură de sport*. București: Moroșan.
9. Ylinen, J. (2009). *Étirements musculaire en thérapie manuelles. Théorie et pratique*. Paris: Elsevier Masson SAS.
10. Page, P. (2012). Current Concept in Muscle Stretching for Exercise and Rehabilitation. *The International Journal of Sports Physical Therapy*, 7(1), 12-13.
11. Solveborn, S. A. (1983). *Le Stretching du Sportif*. Paris: Chiron.
12. Mackenzie, B. (2005). *101 Performance Evaluation Tests*. London: Electric Word plc.

THE ANALYSIS OF MARKING AND DISPOSSESSION TO THE LEVEL OF THE TEAMS FROM PLAY-OUT AND PLAY-OFF

Constantin D.B; Săciu A.I; Tănase T.B; Vernescu M.F
National University of Physical Education and Sports
Bucharest, Romania
e-mail: constantindanbogdan@gmail.com
Coordinator: Conf. Univ. Dr. Grigore Gheorghe

Abstract

In modern football, possession is often essential, but in order to get possession of the ball, it is necessary to know and apply technical elements and techniques of entry into possession of the ball, preceded by individual or collective tactical defense actions.

Through this research, we want to record and analyze the frequency of the technical process of entry into possession of the ball, the defection (face, back and side) and individual tactical defense, the mark (man to man and interception) in Romania at The level of some of the teams of the First Professional Football League, qualified in play-out and play-off.

To accomplish this goal, we will produce registration cards for the technical process of disposing and marking matches played between the teams mentioned above during a 90-minute game for 5 stages and 30 games respectively.

Introduction

The reason for choosing this theme

Being divided into this sport and seeing the collapse of league football 1, we want to see if there is a significant difference between the teams participating in the playoffs of the league 1 and the teams participating in the play-out.

This paper intends to study the football game at the level of the technical-tactical league 1 and to emphasize the individual tactical action of the mark and the technical element of entry into possession of the ball, the dispossession of the opponent of the ball which in our view are essential in the game of football.

Purpose and objectives proposed

The purpose of this paper is to analyze the frequency and effectiveness of the relegation and markup in the play-out and play-off teams. This study will show to what extent disposals can benefit a team and what form of bookmarking is most often used by teams in league 1 and whether there are differences between teams in the first half of the ranking and the second half. For achieve our goals, we set the following objective:

- Systematization of specialized literature;
- Elaboration of the registration cards, which have the data collected during the matches recorded;
- Collecting data observed during matches;
- Processing and interpretation of data obtained from registration records.

Theoretical-methodological foundation of the work

1.1 Description of tactical individual defense action: the mark

An opponent's mark is the individual tactical action by which a defense team player prevents the opponent from directing the ball or directing towards the goal.

The strict or man-to-man mark is when the opponent is between the ball and the defender and the distance between the striker and the defender is up to one meter. This form of marking usually applies only to half of its own terrain, it is characteristic of man-to-man defense and is

also applied in the combined defense, near his own gate. It is also used successfully in the fixed phases of the game.

Marking on surveillance.

In this form of mark, the defender is placed on the line that joins the striker with the goal, at a greater distance from the striker, in the middle of the field and lesser as it approaches the gate.

In the surveillance mark, the defender has the ability to observe the actions and movements of the opponents and the partners, the intentions and the manner of unfolding the attack.

1.2 Description of the technical entry into possession of the ball, deprivation of the opponent of the ball

Depositing is a technical element aimed at removing the ball from the opponent's possession executed by all players regardless of the post when the team is in defense.

Defeat by attack from the front

The process consists of three phases: - stoning - approaching the player with the ball and finding the favorable moment of disposing itself - disengaging the defeat by a prompt action - putting the ball and opponent in contact with the inner but determined goal with the shoulder in the opponent To unbalance and take the ball out of control.

Attacking by side attack

A process that is done in the direct fight with the opponent and consists of attacking the player from the side by ball by interposing the ball to the ball simultaneously with the bending of the trunk to the outside, the arm next to the opponent will be stuck to the body, the other stretched out laterally for balance.

Dispossession by back attack

A method used when the striker overcame the defender and consists of interposing one leg of the defender between the ball and the keeper when the distance permits

Presentation, Processing and Interpretation of data

2.1 Research methods used

In order to be realizable this research work, we have used a series of research methods known to everyone, precisely:

- method of observation - this method I made observations on official matches played in the play-off and play-out of the championship
- method of recording - following a series of official games, we made 30 record notes
 - 15 record notes for official games in the playoffs of the league 1 Romania;
 - 15 official game record notes in the play-off of the league 1 Romania.
- Statistical-mathematical method - we have made calculations such as arithmetic mean
- method of graphic -we performed a series of graphical representations in order to obtain a more objective image of the results obtained from the research.

2.2 Presentation of data

In the presentation of the research data we made the following registration cards to the matches of the football teams in league 1 after the regular season.

Centralized table with the number of defeats and mark type performed on play-off teams.

Defeat the opponent of the ball	R 1	R 2	Total
By the front attack	250	280	530
By attack from the side	216	227	443
By the back attack	121	133	254

Table 1. The number of disqualifications made by play-off teams.

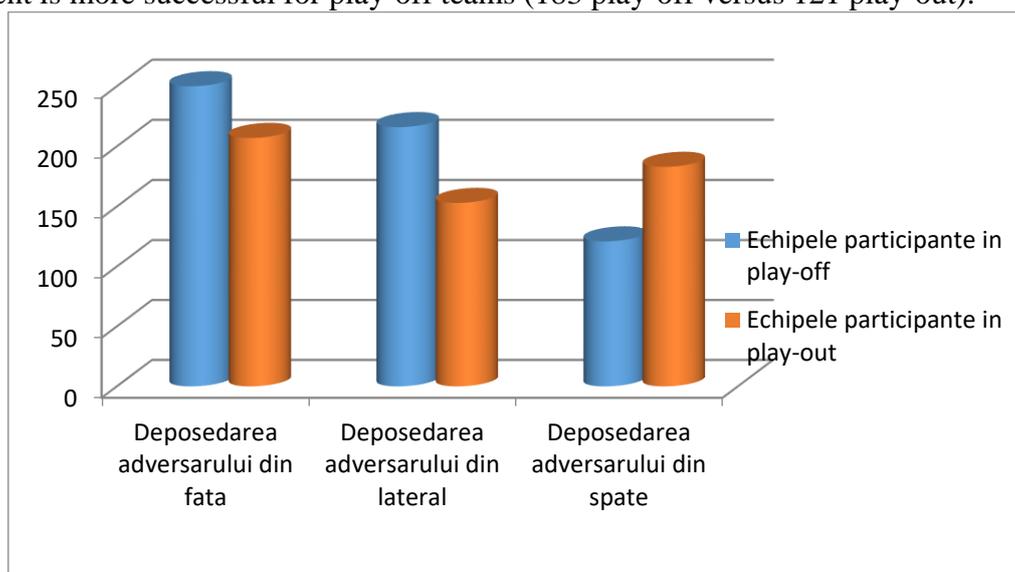
Centralized table with the number of redundancies and bookmarks made on play-out teams.

Defeat the opponent of the ball	R 1	R 2	Total
By the front attack	207	139	346
By attack from the side	153	208	361

Table 2. Number of defeats made by the participating teams in the play-out.

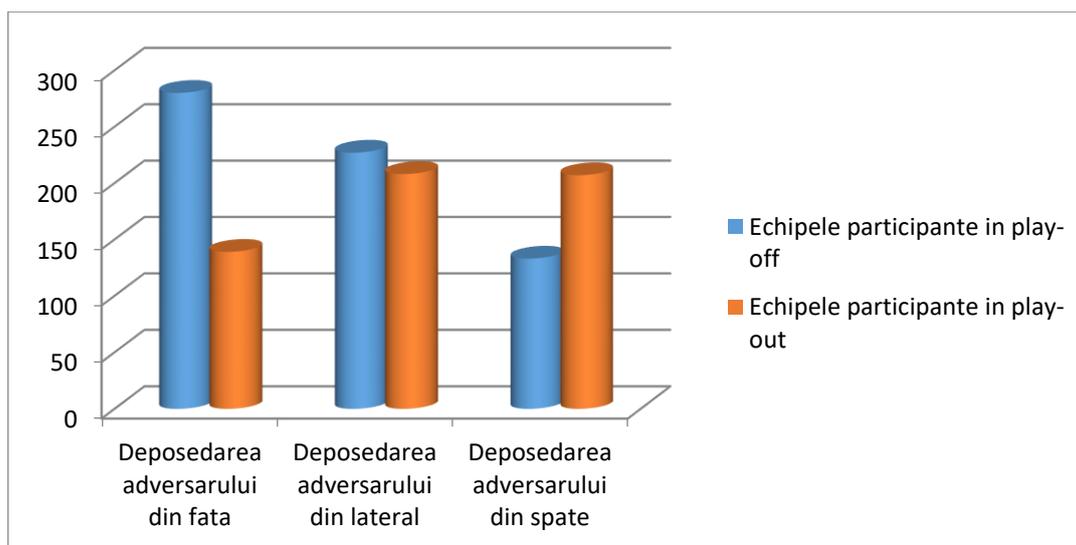
2.3 Processing of data

First Half - In the first half, the number of playoffs participating in the teams is higher both through the technical process, face-to-face disqualification (250 play-off teams, 207 play-off teams) From the side (216 play-off versus 153 play-out); While the offending technique of the opponent is more successful for play-off teams (183 play-off versus 121 play-out).



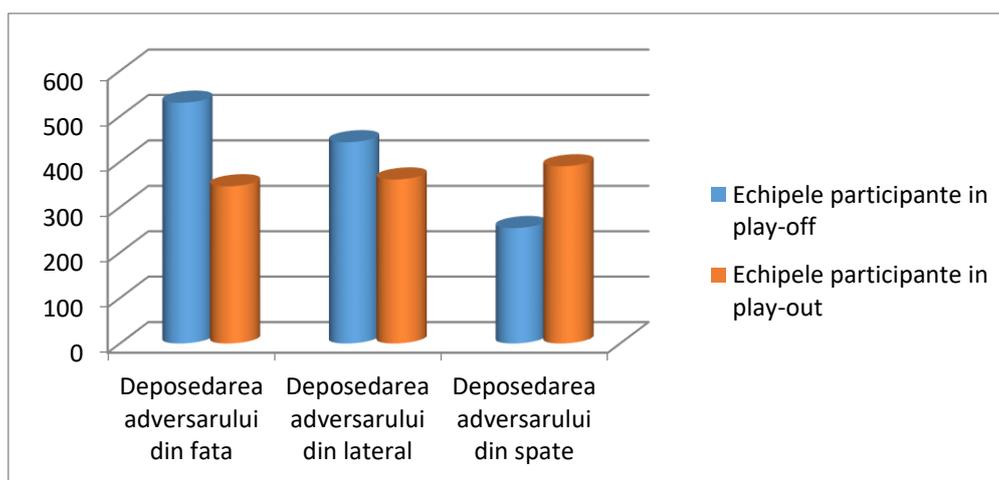
Graphic No. 2.1 This graph is the comparison of the first-place defeats between the play-off and play-out teams

Second half –In the second half, the number of play-offs in the teams is noticeably higher for the technical process, front-end defeat (280 play-offs against 139 play-outs), while side attack is a big difference (227 play-off versus 208 play-out); While the technical process of defeating the opponent through the back attack is much better for play-off teams (207 play-offs than 133 play-outs).



Graphic No. 2.2 This graph is the comparison of second-place reputations between play-off and play-out teams

Total –Throughout the course of the study, the number of defeats made by the play-off teams is nearly double for the technical process, front-end defeat (530 play-off vs. 346 play-out), while side attack is not a (443 play-off versus 361 play-out), while the offending technique of the opponent's back attack is much more successful for play-off teams (390 play-offs than 254 play-outs).



Graphic No. 2.3 This graph is the comparison between the deflections made during the entire match between the play-off and play-out teams.

2.4 Interpretation of data

In the above graphs we see the objective comparison of the deflections made by the teams participating in the play-offs and the teams participating in the play-out of the league championship 1 Romania. There is a noticeable difference in play-off teams, both on front-end defeats and side attacks.

As a result of the recordings, it is noticed that the main means used to remove the ball from the opponent's possession is through the attack from the front for the play-off teams, followed by the offensive side attack and back attack. If for the play-out teams the main means used to gain possession of the ball is the defeat by attack from the front to the play-out teams, the situation is changed, so this is the most rare, followed by the attack from the side, The back attack is the most common.

For all the procedures proposed for the study, there is an increase in the second half, less for the teams participating in the play-out of the backscore, if in the first half there were 207 defeats in the second half We have a drastic drop, 139 rebounds from the front attack.

As far as the marking is concerned, it has been observed that all teams use the human-to-human mark only on the surface and free kicks or corner kicks, and throughout the game, the surveillance mark is used.

Conclusions

Following the study we can express the following conclusions:

Even though the number of defeats was higher for play-off teams, they have more goals (7.33 media per team) than play-outs with an average of 6.37 goal-averages after 7 rounds We can conclude that the defenses of the play-off teams are much more relaxed by focusing on the attack, the mark being mainly the interceptions of teams saving a lot of energy avoiding the human-to-human mark, which is present only in fixed phases.

Based on the study, we find that the number of deployments made by the play-off teams is higher, so we can see that the level of football in the first part of the rankings is higher, the players being better prepared from the physical and technical tactical point of view, but And from a psychological point of view the motivation is different.

We can say that the number of defeats is not idle the team that is in the attack but rather the team that is in defense because, due to the low quality of the players and the game in the league league, teams have the ability to keep possession of the ball in the adversary field for a long time.

Bibliografie

1. Ciolcă, S.M., 2008, *Fotbal. Fundamente Teoretice și Metodice*, București, Academia Națională de Educație Fizică și Sport.
2. Grigore, Gh., 2008, *Selecția la Copii și Juniori*, Editura Moroșan, București.

ASSESSMENT OF THE COACHES' OPINION ON THE USE OF THE QUESTIONING METHOD IN TRAINING 11-12-OLD FOOTBALL PLAYERS

Roman I., Felegeanu, C.,

National University of Physical Education and Sports (NUPES)

Bucharest, Romania

Email: iordanroman@yahoo.com

Coordinator: Rață, G., PhD Professor.

Introduction

The football game has a situational nature in order to streamline training, the use of the questioning method is necessary because it implies the emergence of complex theoretical and complex practical situations which require a particular concentration for the players in finding the optimal solutions in accordance with the unpredictable nature of the game moments, especially with the short solving time which requires quick thinking and decision. Each sportsman during a game gets a task or more to be solved and the coach's assignment is to facilitate in training a contradiction between the ideas or interests arising in different problem-situations which they must solve by choosing the optimal solution manifestation. Learning through problem-solving is a stimulating learning initiative that aims at the child's reply initiative. The use of the questioning method, defined in the DEX as "an educational method that triggers the student's independent work, thinking and personal effort" requires the coach to create voluntary difficult situations to be solved by the player during training. The problem or challenge is, in essence, a cognitive difficulty (lack of knowledge). This difficulty is given either by a low experience or by a misunderstanding or by a limited ability to link information. Solving the problem is created based on the subjects' cognitive information; a difficulty is understood and solved differently by each subject.

G. Rață (2008) believes that questioning is based in the sport training on "the exercise through deduction and creative thinking, resulting from the analysis and comparison of situations arising freely or intentionally caused following the detection of the relationships between knowledge, skills and abilities already acquired"

The use of questioning can:

- have "a formative value" as the athlete needs to know information on technique, tactics, football game rules, etc .;
- "enrich personal experience" through observations and immediate findings in the approach for performing the activities, but also in solving challenging issues;
- "play a role in the formation of perceptual structures and exploration methods" specific to the activity performed;
- "develop different kinds of sensitivities";
- develop a "sense of observation";
- "develop imagination and imagery";
- "develop positive emotions" caused by the joy of success and dilemma solving.

The present study consists in designing a questionnaire which includes a set of 10 questions addressed to the 100 coaches and methodologists investigated.

Research purpose, tasks, methods and hypotheses

The research purpose in this study is to outline a perspective on the level of awareness of coaches and methodologists as well as their opinion on the questioning method and the degree of its use in the training of children and juniors.

For this research, we established the following tasks, which resulted from the topic setting and the need for a theoretical and methodological argumentation of our research: drawing the questionnaire for coaches of children and youth centres holding UEFA B, A and Pro licenses in order to know their opinion on using the questioning method in the football game for 11-12-year-old children; carrying out the questionnaire pre-testing in order to check its fidelity, pre-testing performed by the calculation of the L. J. Cronbach's alfa coefficient on a number of 20 coaches in the children and youth centres; applying the questionnaire for coaches; recording, processing and interpreting the statistical data obtained from research.

In order to accomplish this scientific approach, we used the following methods: the bibliographical study; survey; statistical and mathematical method and graphical representation method. For data processing and interpretation, after they were structured and centralized, as well as for calculating some statistical indicators we used the SPSS 17.0 statistical analysis program and the Microsoft Office Excel 2010 software. 83 coaches participated in the research. The study aims to verify the hypothesis according to which *the use of the questioning method in training children within the football teams is different from one coach to another*.

The research results and their interpretation

After collecting and centralizing the data, we obtained the internal consistency of the questionnaire by calculating the L.J. Cronbach's alpha coefficient for the questionnaire's questions (Table 1). Thus, the L.J. Cronbach's alpha coefficient resulted for this questionnaire, with a value of 0.957, falls within the thresholds set by most researchers between 0.70-1. The resulting coefficient certifies both the consistency of the statements and the validity of the questionnaire as a whole. This fact led us to apply the questionnaire to the entire research sample.

Table 1. The value of the L.J. Cronbach's alpha coefficient for the applied questionnaire

Reliability Statistics	
Cronbach's Alpha coefficient	No of Items
0.957	52

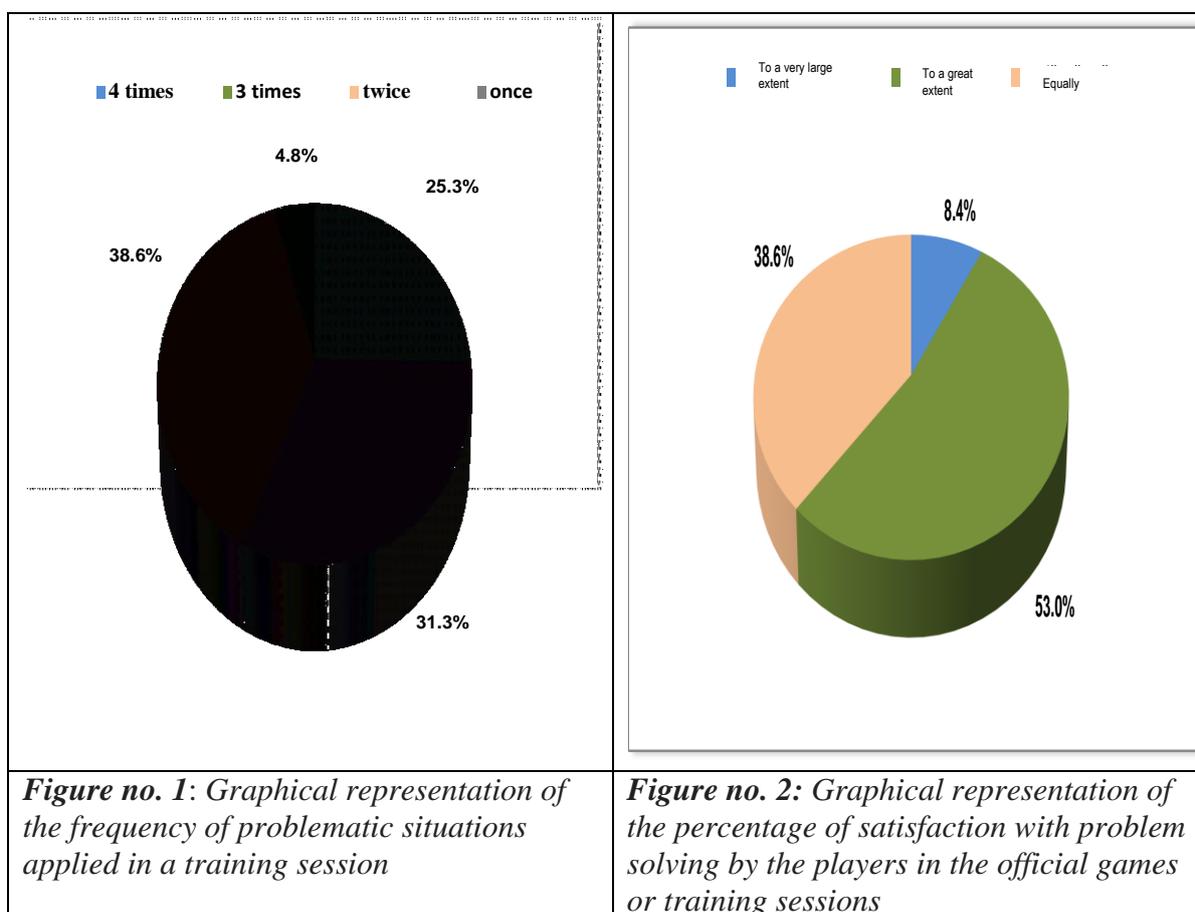
Following the processing of the answers given by the 83 coaches, and following their analysis we have found and highlighted their opinion.

For the Question no.1 *Please indicate what the frequency of problematic situations is in a training session*, 83 responses were processed. The coaches' answers show that the frequency of problem situations in a training is as follows: *once* in a training session, given by 4 coaches, which represents 4.8%; *twice* in a training session, given by 32 coaches, which represents 38.9%; *three times* in a training session given by 26 coaches, which represents 31.3% and *four times* in a training session given by 21 coaches, which represents 25.3%.

Therefore, it can be noted that the interviewed coaches used the questioning method, with the highest frequency in a training with 25.3% (Fig.1). In conclusion, we can state that the questioning method is insufficiently applied, a fact for which there is a need for better awareness, promotion and, last but not least, an effective implementation for the use of a much larger number of coaches for the training process of children and juniors.

For the Question no. 2 *Please indicate to what extent you are satisfied with the problem solving by the players in the official games or during training*, a question which highlights the degree of satisfaction with the problem solving by the players in the official games or during training, the opinion is the following: *equally*, a response given by 32 coaches, which represents 38.6%; *to a great extent*, a response given by 44 coaches, which represents

53.0% *to a very large extent*, given by 7 coaches, which represents 8.4%. Therefore, most of the coaches interviewed are satisfied with the problem solving by the players in the official games or during training, as shown in the Figure no. 2.



To the Question no. 3: *State your opinion regarding the following statement: "The discovery of the solution by the players, and thus getting the players used to creative thinking, to making fast decisions, develops the ability to react according to various and unpredictable situations."* Most of the interviewed coaches *totally agree* (61.4%), or *agree* (28.9%) with the statement. Therefore, most coaches support the fact that making children accustomed to creative thinking and rapid decision-making can develop the ability to react to the game situations as shown in the Figure no. 3.

To the Question no. 4: *Tick with an X the value of each training method which helps to improve the motor response in children according to your experience and opinions.* The most important training methods that help to improve the motor reaction in children according to the experience and opinion of the interviewed coaches are the following: the use of dynamic games, with some tasks to be performed (very important for 75.9% of the respondents) and the performance of some technical procedures in the presence of an active opponent (51.8%). Thus, it can be seen that influencing the motor reaction of children is carried out under conditions of active adversity as shown in Figure no. 4.

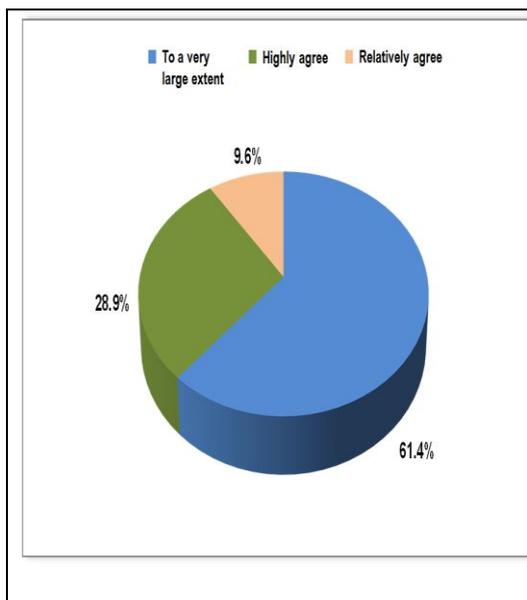


Figure no. 3: Graphical representation regarding the appreciation of the influence of special abilities on the reaction ability

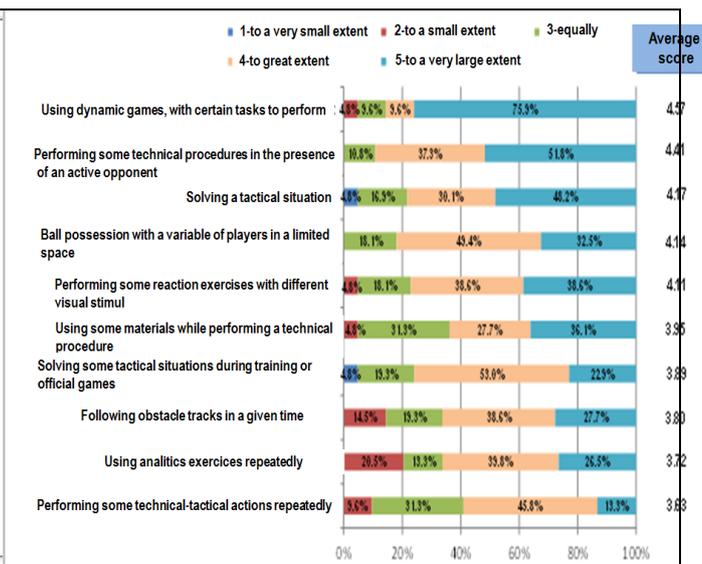


Figure no. 4: Graphical representation of the importance of the training methods

To the Question no. 5: *To what extent do you consider that the technical training positively influences the solving of unpredictable game situations?* Most of the interviewed coaches consider that the technical training positively influences the solving of much unexpected game situations (66.3% of the respondents). Therefore, it can be seen that the technical baggage of the player is the decisive factor in solving the game moments as shown in the Figure no. 5.

To the Question no. 6: *From the following list of skills developed by the player in the training process, please assign points in the order of their importance.* The most important intellectual abilities in the opinion of the interviewed coaches are: creativity (very important for 72.3% of the respondents and important for 26.5%), concentration (very important for 75.9%), anticipation (very important for 59.0%) and motor intelligence (62.7%). Hence, the questioning is a present method given that it stimulates the skills outlined above according to in the Figure no.6.

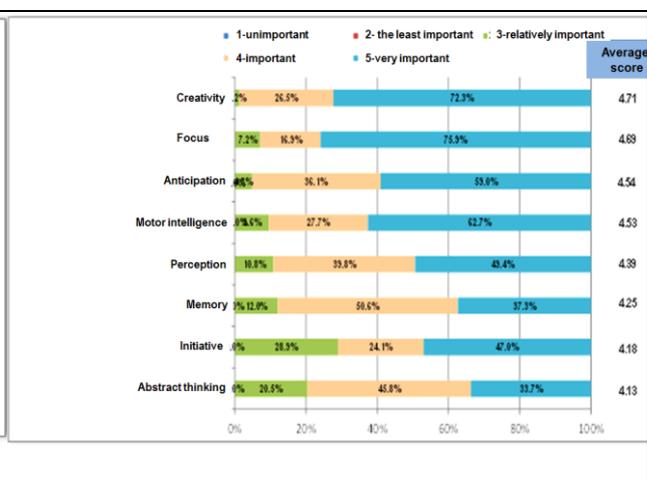
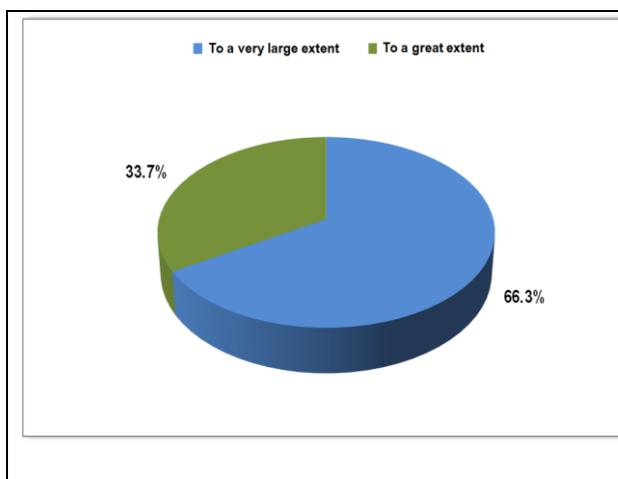


Figure no. 5: Graphical representation of the influence of technical training on solving unpredictable game situations

Figure no. 6: Graphical representation of the importance of intellectual abilities

To the Question no.7: Assess by crossing with an X from 5 and 1, in the order of your players' preferences, the solving of every problematic situation occurred during the game. The most important issues encountered during the game requiring a solution are the following: in the attack phase when the player has the ball (very important for 61.4% of the coaches included in this research), depending on the number of players involved in the problem situation in a numerical superiority or inferiority (54.2%), depending on the emotional and volitional states (60.2%) and limited space when the player has the ball (55.4%), according to the Table no. 2. Thus, we can see the offensive predisposition of the players by solving the phases in the attack, as well as by taking the initiative of the game determined by the ball possession.

Table no. 2: The percentage results in assessing the degree of solving each problem situation that occurred during the game by their own teams. -%

Solving each problem situation that occurred during the game - % out of the total, N=83	1	2	3	4	5	M
In the defence phase when the opponent does not have the ball	0.0%	0.0%	25.3%	41.0%	33.7%	4.08
In the defence phase when the opponent has the ball	0.0%	0.0%	19.3%	30.1%	50.6%	4.31
In the attack phase when the player does not have the ball	0.0%	4.8%	26.5%	28.9%	39.8%	4.04
In the attack phase when the player has the ball	0.0%	0.0%	0.0%	38.6%	61.4%	4.61
Time-limited in the defence phase	0.0%	4.8%	15.7%	39.8%	39.8%	4.14
Time-limited in the attack phase	0.0%	0.0%	10.8%	49.4%	39.8%	4.29
Space-limited when the opponent has the ball	0.0%	0.0%	19.3%	33.7%	47.0%	4.28
Space-limited when the player has the ball	0.0%	4.8%	9.6%	30.1%	55.4%	4.36
Depending on the area of action when the player is in the team on the right, in the middle or on the left	0.0%	8.4%	15.7%	42.2%	33.7%	4.01
Depending on the action area when the player is in the defensive area, midfield or attack area	0.0%	3.6%	19.3%	20.5%	56.6%	4.30
Depending on the number of players involved in the problem situation in equal number (e.g. 1 vs. 1, 2 vs. 2, etc.)	0.0%	0.0%	10.8%	48.2%	41.0%	4.30
Depending on the number of players involved in the problem situation of playing in numerical superiority or inferiority	0.0%	0.0%	4.8%	41.0%	54.2%	4.49
Depending on the affective and volitional states	0.0%	9.6%	4.8%	25.3%	60.2%	4.36

* Legend: **1-unimportant; 2- the least important; 3-relatively important; 4-important; 5-very important M- arithmetic mean**

The answers to the Question no.8: *To what extent do you agree with the following statement: “Applying the questioning as a modern training method is represented by the adaptation to the requirements of the football game and the necessity to orientate the training according to the demanded technical-tactical pre-requisites”* highlights the application of the questioning as a modern training method - represented by the adaptation to the requirements of the football game and the necessity of orientation of the training according to the technical-tactical requirements demanded, as shown in the Figure no.7.

The answers to the Question no.9 - *Indicate which is the dominant solution in coping with the outperformance of the opponent with a positive result*, highlights the choice of the solving manner of their own players. We can notice the predispositions of the players to collaborate with the other teammates as well as their taking of initiative to outperform the opponent as shown in Figure 8.

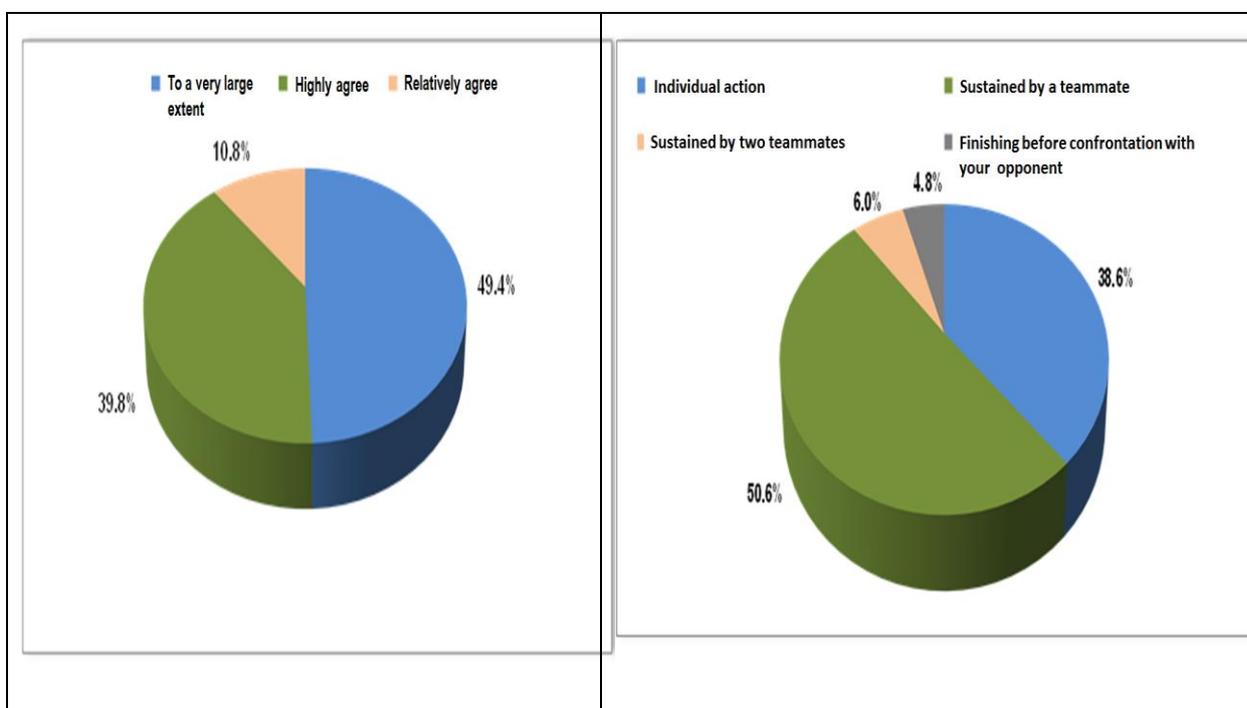


Figure no. 7: Graphical representation of the application of questioning as a modern training method represented by the adaptation to the requirements of the football game and the necessity of orienting the training according to the demanded technical-tactical pre-requisites

Figure no. 8: Graphical representation with the dominant solution in coping with the outperformance of the opponent with a positive result

The choices for the answers to the Question no. 10: *Mark with an X (on a scale from 5 to 1) your choice for each answer regarding the importance of the following components of the player’s profile which have a key role in shaping the performance character in football players* can be found in the Table no. 3, and highlight the main components of a player’s profile,

determining a performance character. The most important components of a player's profile with an essential role in the formation of a professional character for the football players are the following: imagination (very important for 78.3% of the respondents), attitude towards training and the whole program (83.1%), decision-making and their quality (74.7%) and the spirit of sacrifice (71.1%). Hence the importance of having an attitude towards training as well as demonstrating the acquisition of skills such as imagination, decision-making and their quality.

Table no. 3: Percentage results regarding the importance of components of a player's profile in the shaping a performance character (%).

Importance of components of a player's profile in the shaping a performance character - % out of the total, N=83	1	2	3	4	5	M.
Lucidity	0.0%	3.6%	4.8%	45.8%	45.8%	4.34
Imagination (creation)	0.0%	0.0%	0.0%	21.7%	78.3%	4.78
Anticipation	0.0%	0.0%	13.3%	33.7%	53.0%	4.40
Psycho-physical freshness	0.0%	0.0%	4.8%	43.4%	51.8%	4.47
Communication	0.0%	3.6%	9.6%	24.1%	62.7%	4.46
Decision making, their quality	0.0%	0.0%	4.8%	20.5%	74.7%	4.70
Winning direct duels	0.0%	0.0%	25.3%	25.3%	49.4%	4.24
Masking intentions	0.0%	2.4%	31.3%	37.3%	28.9%	3.93
Relationship with the coach	0.0%	4.8%	1.2%	39.8%	54.2%	4.43
Aggression	0.0%	4.8%	22.9%	19.3%	53.0%	4.20
Acceptance of the reserve status	0.0%	8.4%	16.9%	41.0%	33.7%	4.00
Relationship with the teammate	0.0%	0.0%	6.0%	28.9%	65.1%	4.59
Attitude towards training and the whole program	0.0%	3.6%	1.2%	12.0%	83.1%	4.75
Spirit of Sacrifice	0.0%	0.0%	3.6%	25.3%	71.1%	4.67
Positive attitude towards non-discriminatory conduct of race, religion	0.0%	3.6%	9.6%	12.0%	74.7%	4.58

* Legend: **1-unimportant; 2- the least important; 3-relatively important; 4-important; 5-very important M- arithmetic mean**

Research conclusions

The interpretation of the answers of the interviewed coaches highlighted the important role played by the questioning method in the training of the 11-12-year-old players as well as the need to organize the training by applying this method. Another conclusion that emerges from this study is that the application of the problem-solving method is important, effective and present, but it is insufficiently, optionally and differentially approached in the training of children and juniors. Therefore, the hypothesis that the use of the questioning method in training children within the football teams is different from one coach to another has been confirmed.

Bibliography

1. ***, 1996; *DEX*, 2nd Edition, Encyclopaedic Universe Publishing House, Bucharest, Romania, p. 853;

2. Apolzan D., (2013) – *Football. Game technique. Another approach*, (in Romanian: *Fotbal. Tehnica jocului. O altă abordare*), Rotech Pro Publishing House, Bucharest, Romania;
3. Atkinson & Hilgard (2005) - *Introduction to Psychology* (in Romanian: *Introducere în psihologie*), 14th Edition, Technical 55 Publishing House, Bucharest, Romania;
4. Badea E., (1998) – *Mental flexibility - a Synchronous Vision* (in Romanian: *Flexibilitatea mintală- o viziune sincronică*), Didactic and Pedagogical Publishing House, R. A., Bucharest, Romania;
5. <https://ro.scribd.com/doc/97271214/24/Analiza-de-consisten%C5%A3%C4%83-intern%C4%83-Cronbach-alfa>, 03.05.2016, at 11:49;
6. Radu, I., (1991) *Introduction to Contemporary Psychology* (in Romanian: *Introducere în psihologia contemporană*), Sincron Publishing House, Cluj-Napoca.
7. Rață G., (2006) - *Skills in Motor Activity* (in Romanian: *Aptitudini în activitatea motrică*), Alma Mater Publishing House, Bacău, Romania;
8. Rață G., (2008) - *Didactics of Physical Education and Sport* (in Romanian: *Didactica educației fizice și sportului*), Pim Publishing House, Bacău, Romania, p. 74;
9. Rață G., (2008) - *Physical Education and its Teaching Methodology* (in Romanian: *Educația fizică și metodică predării ei*), Alma Mater Publishing House, Bacău, Romania;
10. Șchiopu U., (1995) – *Age Psychology* (in Romanian: *Psihologia vârstelor*), Didactic and Pedagogical Publishing House, R. A., Bucharest, Romania;
11. Steinhöfer D., (1993) – *Terminology and Shaping of the Training Methods* (in Romanian: *Terminologia și definitivarea metodelor de antrenament*), Leistrenngssport, n. 6, Berlin, Germany;

PHYSICAL TRAINING OF FUTSAL PLAYERS DURING PREPARATION PERIOD

Sokolov S.S.,

Moscow State Academy of Physical Education(MSAPE)

Malahovka, Russia

e-mail: ssfutsal@mail.ru

Coordinator: Levin V.S., Ph.D., Professor

Abstract. The data of definition concerning the structure and direction of training of highly qualified futsal players is presented. The training sessions direction structure of futsal players in the preparatory period is given. The dynamics of futsal players' physical condition is considered in the preparation period.

Keywords: futsal, preparation period, physical testing, physical training.

Introduction

Futsal is one of the most dynamically developing sports [2,5]. According to the International Football Federation, more than 170 countries in the world cultivate this discipline of football [5]. The popularity of the sport is also evidenced by the initiative of FIFA to include futsal in the program of the 2018 Youth Olympic Games in Argentina, instead of football [1].

Modern futsal is characterized by an increased intensity of game actions, an increase in the number of technical and tactical actions per unit of time, transience of game situations [8,9]. High special condition and high physical condition are the main characteristics for futsal players. There are practically no scientific works devoted to the physical training of high qualification futsal players at various stages of the annual cycle of training.

The role of physical condition, which serves as a basis for the development of other components of fitness, invariably increases [6]. Physical training of futsal players must have their own specifics in comparison with the training of football players [3,4,6]. Futsal players overcome the distance of 4-5 km in the regime of jerk-braking actions of a high-speed character during the match [3]. The high intensity of training and competitive activity in futsal influences the planning of physical training of futsal players [6].

Methods of research:

- 1) Study and analysis of scientific literature concerning the problem;
- 2) Pedagogical testing:
 - high-speed abilities;
 - power abilities;
 - speed-strength abilities;
 - special endurance;
 - general endurance.
- 3) Pedagogical experiment;
- 4) Mathematical statistics methods.

Objectives of the study

To develop and experimentally substantiate the construction of the training and training process in the preparatory period of highly qualified futsal players on the basis of an integrated control of physical condition.

Organization of the study

Studies were conducted in the preparatory period of the season 2014/15 numbering 49 days (Table 1). The players of the "Progress futsal club" participated in the study including 17 people, among the players there were players of National teams of Russia and Ukraine, having

experience of performing at the World and European Futsal Championships. Three pedagogical testing of the physical condition of the futsal players were conducted during preparatory period, divided into basic subperiod, specific subperiod and precompetition subperiod stages.

Table 1**Preparation Period Structure**

Preparation period		
Basic subperiod	Specific subperiod	Precompetition subperiod
21 days	14 days	14 days
31 training sessions	23 training sessions	20 training sessions
3 rest days	2 rest days	2 rest days

Results of the study

The program of the preparatory period of the annual cycle of training based on the analysis of scientific literature, theoretical positions and best practices of highly qualified futsal players training and our own practical experience was proposed.

The direction of the training process in the pilot program of the preparatory period is presented in Table 2.

Table 2**Training Session Direction in Preparation Period**

	Basic subperiod	Specific subperiod	Precompetition subperiod
Aerobic	40%	30%	20%
Aerobic -Anaerobic	35%	32%	30%
Anaerobic glycolytic	11%	20%	24%
Anaerobic alactate	14%	18%	26%

Basic subperiod (21 days). The main tasks of the stage were:

-to restore motor abilities of futsal players and the gradual bringing of the team to the same level of condition by gradually increasing physical exertion and further increasing the level of motor abilities of the players;

-to restore basic systems of group and team technical and tactical actions;

At the " basic subperiod " stage 40% of the training time is devoted mainly to aerobic work, mixed aerobic-anaerobic work - 35%, anaerobic glycolytic - 11%, anaerobic alactate - 14%.

Specific subperiod (14 days). The tasks of the stage included increasing the level of all motor abilities of players, and, first of all, special physical qualities. Studying new game schemes for group and team actions. Formation of the basic composition of the team. At the "specific subperiod" stage 30% of the training time is devoted mainly to aerobic work, mixed aerobic-anaerobic work - 32%, anaerobic glycolytic - 20%, anaerobic alactate - 18%.

Precompetition subperiod (14 days). The tasks of the stage included work to achieve the optimal level of team readiness, complete the formation of the basic composition of the team, improve tactical schemes for team and group games, conduct theoretical classes to prepare for the nearest games of the championship. At the "precompetition subperiod" stage, 20% of the training time is devoted primarily to aerobic work, Mixed aerobic-anaerobic work - 30%, anaerobic glycolytic - 24%, anaerobic alactate - 26%.

Table 3**Dynamics of Physical Condition of Futsal Players in Preparation Period**

Statistical Indices	Run (sec)		Static dynamometry, kg	Long jump, cm	104 m Shuttle Run, sec	3000 m run, min
	10 m	30 m				
Basic subperiod						
M	1,80	4,20	137	251	25,1	10,54

$\pm m$	0,08	0,14	11	14,2	1,7	0,56
Specific subperiod						
M	1,74	4,09	145	260	24,3	10,11
$\pm m$	0,09	0,12	14	12,1	1,0	0,31
Precompetition subperiod						
M	1,68	3,89	176	266	22,2	9,38
$\pm m$	0,07	0,09	10	7,2	0,8	0,23

The dynamics of the physical condition of the players of the futsal team was evaluated in the process of experimental training program conducting. The complex physical fitness testing program included:

- speed abilities testing - running 10 m and 30 m;
- power capabilities testing - static dynamometry;
- speed-strength abilities testing – standing long jump;
- special endurance testing - 104 m shuttle run;
- general endurance testing - 3000 m running.

The first testing (baseline level) was conducted on the third day of regular training sessions for futsal players (the beginning of the "basic subperiod"). The second testing (intermediate) was conducted at the beginning of the "specific subperiod" stage on the 23rd day of regular training sessions. The third testing (final) to determine the level of physical fitness of the futsal players was held in the middle of the "precompetition subperiod" stage on the 43rd day of regular training sessions (Table 3).

Considering the dynamics of changes in the level of physical condition of the futsal players (Table 4) at some stages of the preparatory period, it can be concluded that the results of assessing the level of physical fitness of athletes as a whole made it possible to state that after 20 days of regular training sessions there were no significant changes in the test scores, excluding the test for general endurance. A significant increase in the indices of general endurance was due to the directing of the training process at the "basic subperiod" stage, where 40% of work was predominantly aerobic. In general, all the indicators of physical condition have improved, and the unreliable increase in the data obtained during the interim testing may be associated with a regular decrease in the functional parameters as a result of carrying out large training loads.

Table 4

Dynamics of Physical Condition in Preparation Period

Indices	I	II	III	I - II	II - III	I - III
running 10 m, sec	1,80 \pm 0,08	1,74 \pm 0,09	1,68 \pm 0,07	p>0,05	p>0,05	p<0,05
running 30 m, sec	4,20 \pm 0,14	4,09 \pm 0,12	3,89 \pm 0,09	p>0,05	p<0,05	p<0,05
static dynamometry, kg	137 \pm 11	145 \pm 14	176 \pm 10	p>0,05	p<0,05	p<0,05
standing long jump, cm	251 \pm 14,2	260 \pm 12,1	266 \pm 7,2	p>0,05	p>0,05	p<0,05
104 m shuttle run, sec	25,1 \pm 1,7	24,3 \pm 1,0	22,2 \pm 0,8	p>0,05	p>0,05	p<0,05
3000 m running, min	10,54 \pm 0,56	10,11 \pm 0,31	9,58 \pm 0,23	p<0,05	p>0,05	p<0,05

Final testing, at the pre-competition stage of the preparatory period, have demonstrated a marked increase in the level of physical condition. Statistically significant increase has been marked in all indicators of physical condition of futsal players.

Conclusions

1) We have developed and experimentally substantiated the training sessions' structure of highly qualified futsal players in the preparatory period as a result of the study.

2) Futsal players physical condition level has increased significantly as a result of our program, introduced into training sessions.

References

1. Aliyev, E. G. Olympic potential futsal / E. G. Aliev, S. V. Levin, S. S. Sokolov // the Olympic games and modern society: materials of the III all-Russian scientific-practical conference with international participation (October 27-29, 2016). Mosk. State. Acad. physical culture; ed. Y. A. Fomin.- Malakhovka: MGAFK, 2016.- S. 3-6.
2. Andreev, S. N. Futsal : a model program for youth sports schools, specialized children-youth schools of Olympic reserve / S. N. Andreev, V. S. Levin, E. G. Aliev, K. V. Eremenko.- M.: Soviet sport, 2008.-96 C.
3. Babkin, A. E. Physical training of football players (futsal): Methodical recommendations / A. E. Babkin, V. N. J. – M: Print Center, 2003.- 30
4. Veprikov, D. V. Construction of training process based on the comprehensive evaluation of loads of skilled athletes in futsal: author. dis. kand. PED. Sciences / D. V. Veprikov.- Malakhovka, 2008.-19 C.
5. Levin, V. S. Futsal: tactics in attack and defense : textbook / V. S. Levin, and S. S. Sokolov ; Moscow. GOS. Akad. NAT. culture. Malahovka, 2016. – 96 p
6. Levin, V. S. Physical training of leading players in various roles on futsal / V. S. Levin // Education, sports, health. The trend of modern Wellness and sports training: Collection of scientific papers on the problems of rehabilitation, physical culture and sports training / Under the General editorship of doctor of medical Sciences, Professor R. N. Dorokhov.- Smolensk: CAPXT, SHUAR, 2009.- S. 63-67.
7. Levin, V. S. Assessment of physical activity in futsal on the basis of the analysis of locomotor movements in the game / V. S. Levin, A. A. Zaitsev quarterly journal of Education, science, research staff Ed. "Yunniti-Dana" M., 2008 №4 – P. 61
8. Skorovich, S. L. assessment of the dynamics of physical preparedness of highly qualified athletes who are engaged in futsal / S. L. Skorovich the Collection of materials of all-Russian scientific-practical conference "Modern football: status and prospects" / Moscow: TVT Divizion 2012 – Pp. 70-72.
9. Sokolov, S. S. Analysis of growth indicators weighty players participating in the world Championship on mini-football (Futsal) 2016 / Sokolov S. S. // Collection of materials of scientific conferences of students, undergraduates, graduate students and applicants MGAFK. XXV edition. Moscow state Academy of physical culture. Malahovka, 2016. S. 91-94.

ANALYZING THE MATCH BETWEEN THE TEAMS OF BULGARIA AND FRANCE. SEMIFINAL OF EUROPEAN CHAMPIONSHIP 2015 IN BULGARIA

*Tachev, T.
National Sports Academy "Vasil Levski"
Sofia, Bulgaria
Email: ttachev@hotmail.com*

My topic for today is the match analysis: Bulgaria - semi-final of the European Volleyball Championship in 2015. These are the two headquarters. Team Bulgaria and the team of France.

In volleyball, statistical analysis is said to be done on every match. The match that we see was the most important match for the volleyball team of Bulgaria in 2015. Extremely important because it all depended if the team of Bulgaria will reach the Silver medal, which hasn't been won since the European Championship in Paris in 1951.

The purpose is to point the strength and weakness in the game of both teams. My analysis aims to examine and identify strengths and weaknesses in the game of both teams by comparing posts and contestants from Bulgaria and France, mainly focusing on reception, attack and blockade.

The main tasks are to:

1. Establish the differences in the receiving of the teams.
2. Establish the differences in the attacks of the teams.
3. Establish the differences in the blockade of the teams.

For completing my aim and tasks I used data from : www.cev.lu

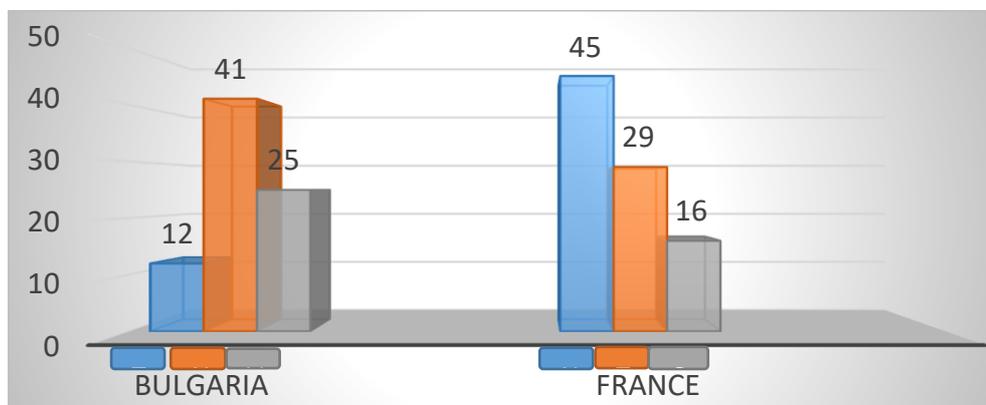


Fig. 1

Here I submitted the starting line ups for both teams. The arrangement of Bulgaria in the 1st set starts with a setter close to the net in zone 4. Close to him is the outside hitter Nikolay Penchev who receives and attacked both Zone 4 and Zone 2 while distant T. Alexiev has to attack in zone 4 only and specializes entirely in the left side of the net. The close middle to the setter is Teodovr Todorov, as against him is the bigger contribution to the team of France Le Roux. In the team of France the setter starts in zone 6 in which the attacker entirely on the left side of the field is Kevin Tillie. With this arrangement, the French have provide higher blockade in the first rotations.

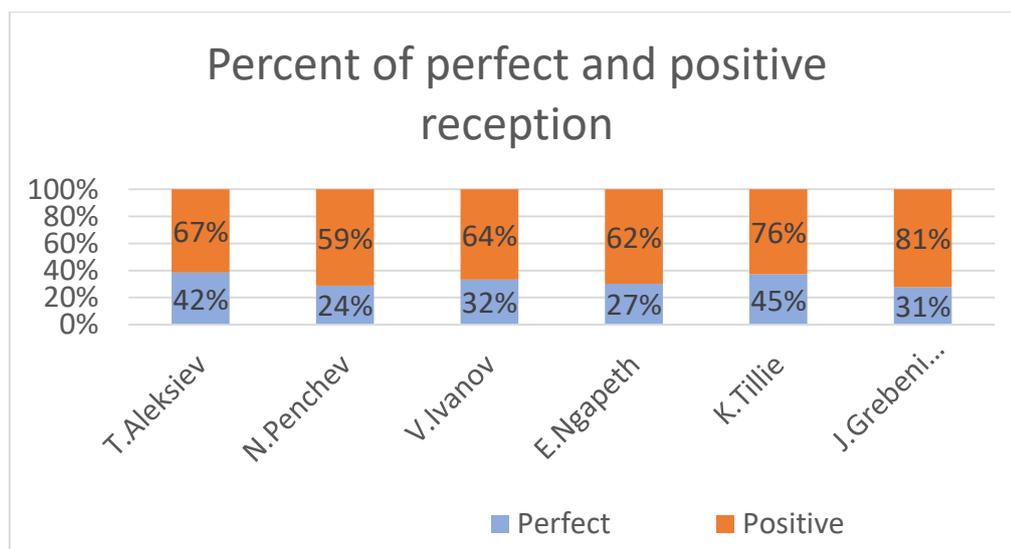


Fig. 2

Very clearly in this game are expressed targeted serves for both teams. According to statistics that were made in the team of Bulgaria, it made sense to aim the serve towards Earvin Ngapeth, trying to get him out of the game, distracting his reception. 45 focused serves to him, followed by 29 and 16 to Tillie and the libero. Distracting competitors who receive and distracting the receiving in this case is easier for both teams to make a double block at the edges of the net, because the middle player has less chance to receive the ball. France tactics were to direct serve entirely to Nikolay Penchev and avoid Alexiev. 41 balls aimed at Penchev 25 to Libero and only 12 to Alexiev. The tactics for the aiming the service in both teams did a very good job. Targeting Penchev was giving a result in a 24% excellent and 59% positively receiving. These to Ngapeth pointed 27% excellent and 62% positive. In receiving these percentages are the lowest for teams. On the chart I have shown the effectiveness for each player of reception for both teams. There now, in each indicator in the corresponding positions of the teams, France have perfectly good and positive receiving. 81% positive reception for the libero of France, and 76% for K.Tillie which help the game with centers and leaving the opposites with a single blockade against them.

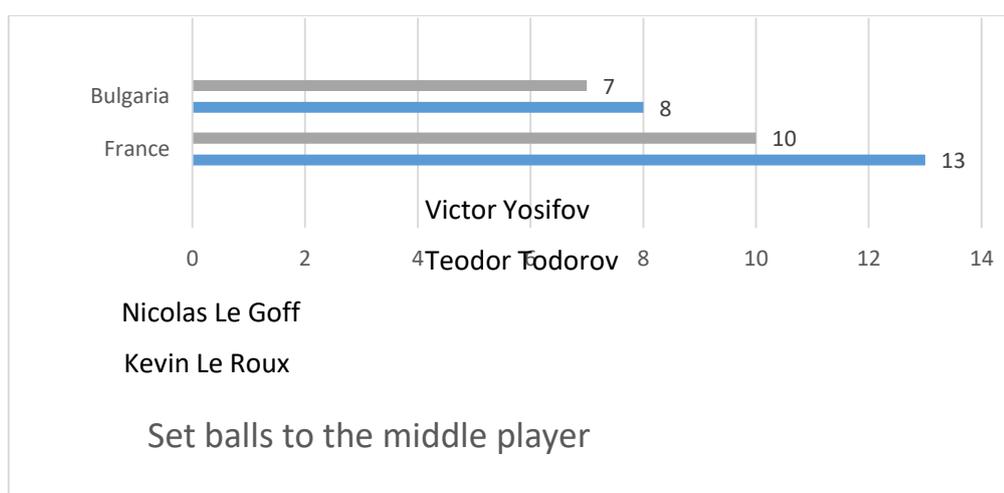


Fig.3

The game of the setters with the middle hitter, which mainly depends on how the ball will be received to the setter. In these indicators the French team has an advantage. 23 set balls

to middle against only 15 for teams of Bulgaria. It was observed that the French distributor plays more with his distant center Le Roux and less with the nearby Le Goff, while Bratoev sets the same number of balls to them. Slight advantage with Teodor Todorov, as he is closer to the setter and Bratoev has more time to distribute as he is near the net.

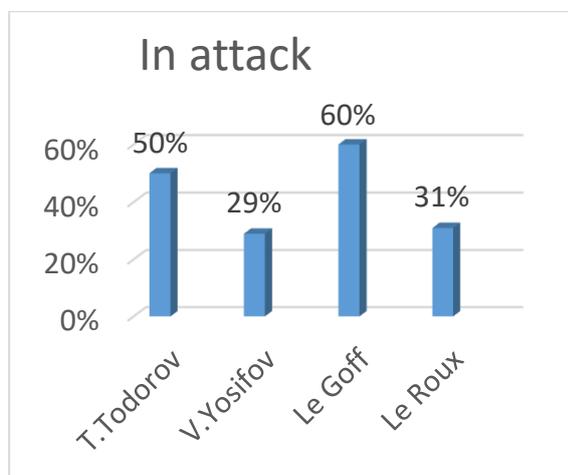


Fig.4

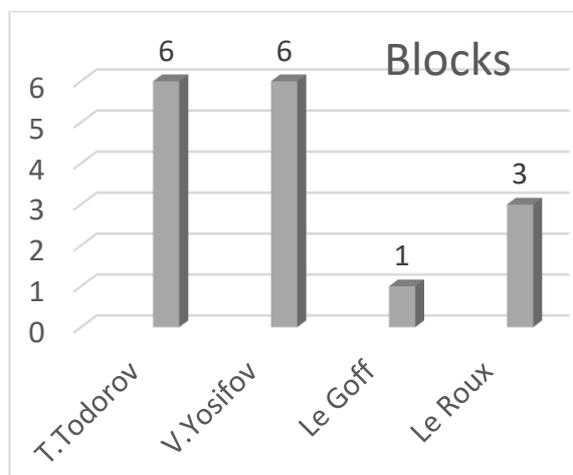


Fig.5

These two charts show the effectiveness of the middle hitters as a percentage spiked balls and blockades. 50% for Teodor Todorov at only 29 percent for Viktor Yosifov, indicating the successful overcome of Todorov against Frenchman Le Roux and the weaker performance of Victor against Le Goff. As for them, less set balls to Le Goff are twice more efficient than those of his teammate Le Roux - 60% against 31%. Exclusive domination by the Bulgarian blockade - 12 blockades for the middle players (6 each) against only four for the team of France. (1 for Le Goff and 3 Le Roux), indicating rapid movement and anticipation of where the ball will be distributed from the opponent. In overall performance Bulgaria's middle players have a better contribution to the team.

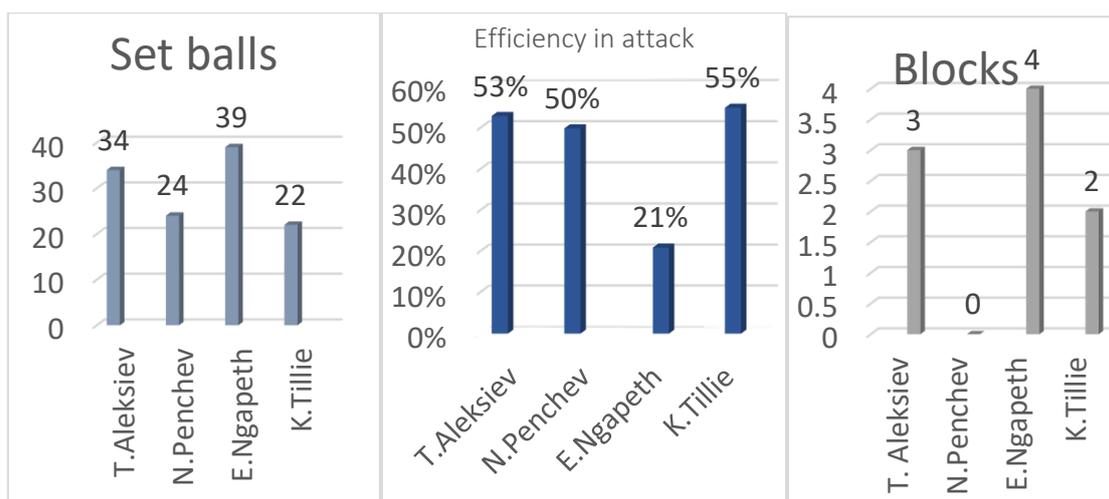


Fig.6

In these three charts I presented the overall efficiency of each outside hitter as submitted balls and rate of play, as well as blockades. The two setters differ with positions to which they set more often. Bratoev plays with more distant outside - Alexiev as to Toniutti with nearby - Ngapeth. 34 set balls to Alexiev and 24 for Nikolai Penchev. This shows not only the security and confidence of the setter to play with Alexiev, but the comfortable side to pass, as his outside

hitter attacked the net only at zone 4. Todor Alexiev has 53% Won balls or 18 direct points of attack. Penchev play less in the attack, which brings 50 percent Won balls. Team France the outside hitter used all match was Earvin Ngapeth. 39 set balls with only 21% success rate. An extremely low rate comparing it with any other attackers. Less used Kevin Tillie has 55% efficiency. Blockades in the outside hitters are on the side of France. 4 for Ngapeth and 2 for Tillie, against 3 for Alexiev and none for Penchev. These blockades showed good adjustment and correct positioning for the blockade.

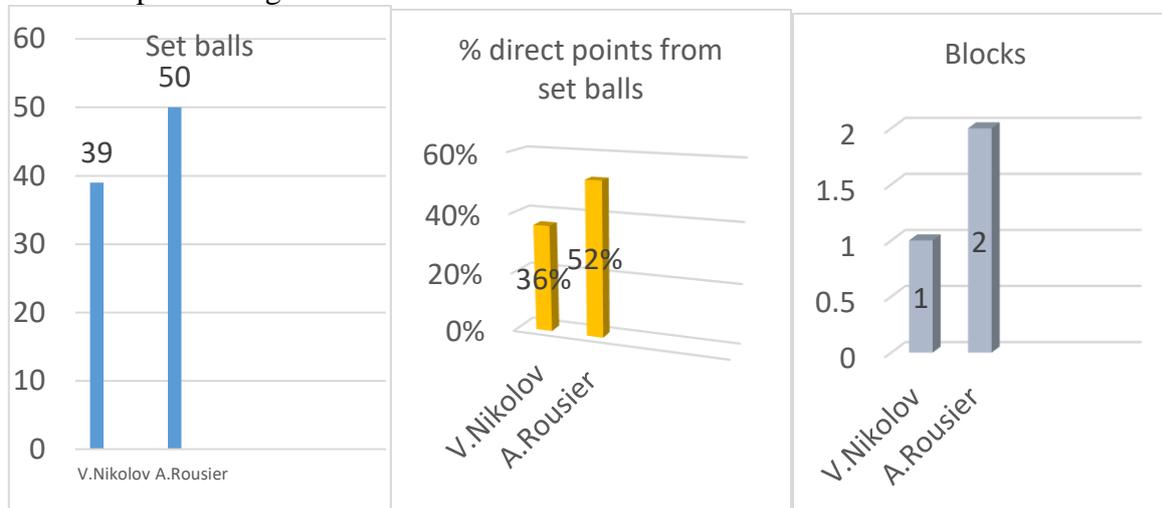


Fig. 7

These figures represent the game of the opposite hitters and their efficiency. For the team of Bulgaria this was mainly Vladimir Nikolov and for France Antonin Rousier. Here is the big difference and won points in the team of France. To Rousier were set a total of 50 balls, of which 52% efficiency. Throughout the match the French setter would not stop searching for his opposite to attack close and back from the net. Rousier has also two blockades against Bulgarian attack. The team of Bulgaria was led by its captain Vladimir Nikolov, who throughout the match got 39 balls, of which 36% efficiency and a one blockade. In critical situations Georgi Bratoev was looking for his opposite more than the players on other positions. Comparing Vlado Nikolov to Rousier we can say that he has less contribution to the team.

Conclusion:

With a total score of 107 points for the team of Bulgaria against 106 for team France, the victory was in favor of the “roosters” with 3 : 2 sets. We showed significant dominance enthusiasm, will and motivation in the first two parts of the semi-final and then we started to drastically lose all those qualities. France showed why it's the best and most compelling team and managed after two lost sets to turn the match in their favor and to complete it. Despite all the euphoria of the hall, chanting the name of Bulgaria, our volleyball team performed at an extremely high level, deserving the respect of our country.

Bibliografy :

1. www.cev.lu

DESIGN OF MODEL CHARACTERISTICS OF ELEMENTS ON THE BASIS OF THE COMPLEX BIOMECHANICAL ANALYSIS OF MOVEMENTS IN ACROBATIC ROCK'N'ROLL

*Terekhin, V.
FSEI HE «Lesgaft NSU,
St. Petersburg, Russia
e-mail: passport380@rambler.ru*

Abstract. Formation of the athlete begins at early age. From that as the foundation of equipment of physical actions will be laid and in general the level of basic readiness is created, further achievements of engaged depend. Because of that the problem of basic preparation is considered especially actual for all the high coordinated types of sports. The main task of basic preparation is forming the technical basis, which is based on accounting to the model characteristics of Basic Element. Within the real research the possibility of design of model of Basic Element taking into account data of the complex biomechanical analysis of movements on the example of an acrobatic rock'n'roll is shown.

Keywords: main walk-step in the acrobatic rock'n'roll, kinematic characteristics, electric activity of muscles, reciprocity, model, reliability

Introduction

In practice of an acrobatic rock'n'roll athletes carry out the main walk-step in the different ways. There is no uniform approach to technology of performance of this Basic Element, both for trainers and athletes. Scientific data on identification of the most rational technology of performance of the main walk-step in the acrobatic rock'n'roll is absent. To basic skills, according to the literature and opinion of the interrogated specialists, the following requirements are imposed: rationality, safety, efficiency, minimum energy consumption. However an acrobatic rock'n'roll coaches have no reference points for their realization. This fact predetermines need of designing the model of the main course on the basis of the analysis of kinematic characteristics and the intramuscular mechanism of the rationality of this basic physical action, which allows optimizing process of development of this physical action.

METHODS: theoretical analysis and generalization of scientific and methodical literature, program materials and rules of competitions; inquiry of specialists in an acrobatic rock'n'roll (n=62; 22 men; 40 women); pedagogical observations over competitive activities of athletes (n=180 qualification: 98 people - 1 sports category, 64 persons - Candidates for the Master of Sports of Russia, 18 people - Masters of Sports of Russia; gender and age: 90 men of 19,12± 1,17 years and 90 women 17,81± 1,42 years old; experience of occupations: 8,34± 2,41 years); a method of noncontact research of a video series of movements in case of execution of options of the course (hardware and software of "Qualisys") in combination with an electromyography (a 16-channel elektromiograf of "MegaWin ME 6000").

The athlete of high qualification participated in laboratory biomechanical researches (Masters of Sports of Russia, the prize-winner of Russia Championship, age: 25 yearsold ; experience of trainings: 10 years). According to the standardized techniques in case of execution of 7 options of the main course (on 12 attempts) in protocols biomechanical characteristics of 10 articulate angles were fixed (talocrural, knee, coxofemoral, shoulder, elbow); distances, angular speeds and accelerations of 16 anatomic points of links of a body (feet; lower tibias; upper tibial; trochanteric; necks; forehead; shoulders; elbows; awl-shaped points of hands), and also frequencies of turn, average and maximum amplitudes of turn of electrical activity of 12

muscles (buttock, direct hips, two-headed hips, lobbies tibial, sural, soleus). All data retrieves were subjected to mathematic-statistical processing by means of the STATGRAPHICS plus program (arithmetic averages of value, an error of mean values, variation coefficients, coefficients of correlations).

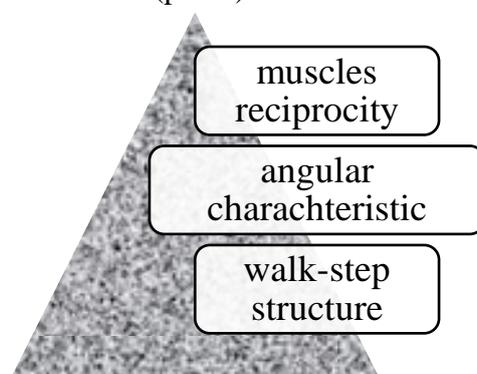
On the basis of the mathematical analysis data modeling of the main course equipment and check of its efficiency in a pedagogical experiment was performed (the contingent – 16 athletes of a stage of basic training). The performance technology of the main course of an acrobatic rock'n'roll reproduced during various temporary periods of athletes training has been subjected to the analysis. The first and second cuts were carried out with an interval of 10 months, allowing to estimate reliability and stability of the equipment of the main course. Opportunity in the course of repeated performance according to competitions rules to resist to exhaustion and failures in the technique was fixed, and also, it isn't dependent on fitness level, precisely according to model to reproduce the technique of the analyzed element. The major parameters of the model are the angular characteristics and reciprocity muscle groups, as the structure of the course has remained unchanged.

RESULTS. In the course of research on the basis of data of the biomechanical analysis the modeling of equipment of the main course assuming the following consistently carried out operations was carried out:

- the analysis of real system of the applied options for the main walk-step technic in the acrobatic rock'n'roll;
- logical model creation of the main walk-step technic in the acrobatic rock'n'roll;
- development of the modeling algorithm;
- creation of imitating model of the main walk-step technic in the acrobatic rock'n'roll;
- organization and carrying out imitating experiment;
- processing and analysis of results;
- conclusions about adequacy to the developed model of the main walk-step technic in the acrobatic rock'n'roll.

Considering that the model is the simplified reflection of physical action, at an initial stage of modeling components of biomechanical model have been concretized. At the same time it has been considered that between above-mentioned characteristics of the right side of a body (side of a supporting leg) of various options of main walk-step technic there are no reliable distinctions, and parameters of hands movements in all options are identical. In this regard at a development stage of model it was supposed to concretize, first of all, biomechanical characteristics of the left side of a body (side of a swing leg).

Proceeding from the importance of each component of technic, their hierarchy and sequence in algorithm has been defined (pic. 1).



Pic. 1 - Imitating algorithm of model of the main walk-step in the acrobatic rock'n'roll

The structure of the walk-step is the basis for all types. Regardless of anthropometric parameters and other conditions are the angular characteristics of predetermining the distance displacement, velocity and acceleration of parts of the body when performing movements at the same pace. Reciprocity is so important for the movement completeness, plasticity and dance style.

On the basis of an algorithm a model of the main walk-step in the acrobatic rock 'n' roll was designed (Table 1).

Table 1 - Model of significant components of the main walk-step in the acrobatic rock 'n' roll

Component	Characheristic		indicators	
Walk-step structure	1 phase	1 – bending, left leg up 2 – straightening your left leg down , straighten the supporting leg	Perfomance tempo (44-52 beats/min)	
	2 phase	3 – bending the left leg , body weight transfer to the front of the foot supporting leg 4 – Front two , with the transfer of body weight to the left leg and the right relaxation .		
Angles characheristics of support joints	ankle	right	98,13°	
		left	126,77°	
	knee	right	150,37°	
		left	164,42°	
	hip	right	156,17°	
		left	104,57°	
Muscle reciprocity of legs	Right leg	anterior tibial - soleus	up	down
			44	42
		tibialis anterior - medial gastrocnemius	20	29
		straight hip - femoral biceps	38	54
	Left leg	Straight hip - gluteus	49	42
		straight hip - femoral biceps		
		Straight hip- gluteus	23	19
		tibialis anterior - medial gastrocnemius	48	53
	anteriortibial - soleus	25	37	

Proceeding from that any developed model has to satisfy the metrological rules of reliability at the final stage of research the stating pedagogical experiment has been made. During the experiment the assessment of ability of the developed model of the main walk-step in the acrobatic rock'n'roll to give similar information to all who use it, and also to reflect the studied biomechanical process was carried out.

Reported figures revealed that the angular characteristics of the main hip, knee and ankle joints have low variability in each of the series ($V = 1,89\% - 5,71\%$), which confirmed the reliability of the external parameters of the model developed by the main walk-step. Regardless of the conditions of performance and the level of physical fitness of an athlete, every attempt was repeated with minimum deviations from the settings made in the beginning of the test. In this case, the left and right leg showed the same accuracy.

Performing a series of attempts after a significant break showed that the proposed version is a stable technic and the differences with the previous series of repetitions are absent ($p > 0,05$).

DISCUSSION

In the course of the results analysis of experimental check of the main course model it is established that in a series from 12 repetitions the muscles reciprocity of legs had low degree of variability. This indicated a high degree of motor actions automation and coordination of the muscles. Execution after the break of the same series of steps from the characteristics specified

by the model shown reliability and stability of skill and therefore the model. All indicators of reciprocity had no significant differences ($p > 0,05$) with the demonstrated previously. That is, the model variant technique main course, acrobatic rock 'n' roll from the point of view of muscle memory was not only resistant to the fatigue factor, but also the long-term.

Results of pedagogical experiment allowed to establish that the model of the main walk-step offered for development accustomed not only quicker, than all others, but also was implemented in practice authentically better. The expert assessment of a series from 12 attempts at the speed designated by rules of competitions has shown that after 3 occupations examinees could execute the main walk-step according to the model for 85% of a quality level. Development of option No. 2 on the same level of quality required 5 trainings. The identical amount of training time has left on technic development of the 4th and 5th options of main walk-step technic. Most of all time was required to learn the 3rd, 6th and 7th options - more than a month.

The findings suggest that as a result of exposure to low variability pedagogical quality performance indicators of the main course option was fixed by the end of the experiment №1 regardless of the level of preparedness of the subjects. That is the basic version of the art evidence-based stroke and proposed as a model to be available for everyone.

It is necessary to conclude that a comprehensive approach to the analysis of the basic technology course can be used to test the effectiveness of the existing elements and developed all kinds of gymnastic disciplines. This will reduce injuries and improve the rationality of sports activities.

LITERATURE

1. Гавердовский, Ю.К. Обучение спортивным упражнениям. Биомеханика, методология, дидактика / Ю.К. Гавердовский. – М.: Физкультура и спорт, 2007. – 930 с.
2. Городничев, Р.М. Спортивная электронейромиография./Великие Луки: ВЛГАФК, 2005. - 230 с.
3. Мамзин, В.И. Методология выявления и применения базовых гимнастических упражнений / В.И.Мамзин, М.В.Мамзина, Е.Ю. Лалаева// Актуальные проблемы физической культуры и спорта: тез. докл. обл. науч.-практ.конф. – Волгоград, 1996. – С. 75 – 77.
4. Самсонова, А.В. Биомеханика мышц: учебно-методическое пособие / А.В.Самсонова, Е.Н.Комиссарова. - СПб.,2008. - 127 с.
5. Терехин, В.С. Теория и методика акробатического рок-н-ролла. Актуальные проблемы подготовки спортсменов / В.С.Терехин, Е.Н.Медведева, Е.С.Крючек, М.Ю.Баранов // Учебное пособие. – М.: Спорт, 2015. – 80 с. (Библиотечка тренера).

INDIVIDUALIZATION OF THE TRAINING PROCESS IN COMMAND SPORTS (ON THE EXAMPLE OF HANDBALL) ON THE BASIS OF THE INDICATORS OF THE NERVOUS-MUSCULAR APPARATUS

Yampolskiy Alexey Sergeevich.

Siberian State University of Physical Education and Sports

Omsk, Russian Federation

e-mail: vox_mortem@mail.ru

Coordinator: Kudrya Olga Nikolaevna – Dr. Sci. Biol., associate professor

Abstract. The article presents the results of a study of the state of the neuromuscular apparatus in response to the training load of qualified handballers in the preparatory period of the annual cycle. Individual reactions of the neuromuscular system to the load of speed-strength character are revealed, depending on the playing role. On the basis of the data obtained, practical recommendations on the correction of the training process are formulated taking into account individual and typological characteristics of the organism.

Key words: handball, game roles, training process, functional state, neuromuscular apparatus, latent time of induced contraction.

Introduction. In connection with the constantly growing intensity of the training process, the search for ways to optimize it is an actual task of the theory of sports training. Optimization of the training load should be based to a large extent on the study of the dynamics of the functional capabilities of the athlete's organism in relation to the training load [3].

The study of the functional properties of the neuromuscular apparatus (NMA), in particular its power, speed, speed-strength characteristics and performance, is of fundamental importance for the modern physiology of movements, since it allows monitoring the functional state of central and peripheral structures, as well as the urgent management of the training process [5].

In game sports, including handball, players on the field perform different roles (playing roles), which differ in the composition and nature of the motor activity, the intensity of physical activity in a competitive environment. In this regard, specific requirements are imposed on the functional condition of athletes. In the training process, accounting for these features is reflected only in the training of goalkeepers. For field players, individualization affects only the performance of technical and tactical exercises and combinations and is practically absent in the development of training sessions for the development of physical qualities.

According to scientists' opinion, the individual characteristics of the athletes' organism are to be the basis of the management of the training process. In this regard, it is relevant to search and implement techniques for assessing the functional state and the urgent correction of the training process of handball players of different playing roles. In our opinion, the methodology for assessing the state of NMA is most effective for the implementation of current monitoring.

The objective of the study was to optimize the training process on the basis of individual features of the functional state of the neuromuscular apparatus of qualified handballers in the training process, regarding their game roles.

To achieve this goal, the following **tasks** are formulated:

- 1) To assess the functional state of qualified handballers in response to the load of speed-strength directivity;

- 2) To develop a set of practical recommendations that allow individualizing the process of training handball players, as well as improve its effectiveness.

Organization and methods of research. Evaluation of the functional state of the NMA was carried out using the hardware complex "Chronax-7" [1]. The following indicators were used for the assessment: the threshold of the appearance of the H-reflex (Hoffman's reflex), the threshold of the M-response of fast and slow muscle fibers, the minimal and average latency time of the M-response of fast and slow muscle fibers.

The H-reflex is a monosynaptic reflective response of the muscle to stimulation of the sensitive fibers of the nerve innervating the particular muscle. In the adult, the H-reflex is normal only in the leg muscles and is an analog of the Achilles reflex [6].

The threshold for the appearance of M-responses in terms of its physiological meaning is similar to the threshold for the appearance of an H-reflex, but indicates a change in the sensitivity (excitability) of the muscle fibers themselves. The latent time of induced contraction is the time of the transient process, during which the physical and chemical processes initiating the contractile act on the membrane of the muscle fiber and in it unfold themselves. Absolute values of latent time of induced contraction are an indicator of the functional state, and the dynamics of latent time of induced contraction is the response of the NMA to the load [2].

The study was conducted in the preparatory period of training, with the participation of the players of the "SKIF" team in Omsk.

To evaluate the reaction of the NMA apparatus to the load, we chose training sessions aimed at developing the speed-strength abilities. The main part of the training was positional game 3x3 with a quick attack, which was conducted in 2 series of 10 approaches for 90 seconds. After 10 seconds of rest, the interval of rest between the series of 5 minutes, as well as throwing exercises in motion and attacking the gate from various positions.

Results of the study and their discussion.

For the analysis, the following athletes were selected:

T., Candidate Master of Sports (CMS), 21 year, height 183 sm, weight 74 kg. Gaming role - the wingman (right). The athlete is left-handed.

M., CMS, 22 years, height 184 sm, weight 82 kg. Gaming role – pivot.

N., CMS, 20 years, height 174 sm, weight 69,5 kg. Gaming role – centre backcourt (playmaker).

S., CMS, 20 years, height 200 sm, weight 86 kg. Gaming role – backcourt.

The results of the study have shown that many athletes have multidirectional changes to the same parameter for the right and left legs. We can assume that this is due to the phenomenon of motor asymmetry, which manifests itself in a change in the parameters of excitability of motor neurons, which is probably due to a greater load on the jogging limb [7]. Analyzing the received data, it is possible to note the following features of the influence of the training load on the condition of the NMA:

Wingman play on the flanks, as a rule, these are clever, technical and fast players.

Assessing the condition of the NMA of the wingman, the following individual characteristics are revealed (Fig. 1):

- an increase in the threshold of the appearance of the H-reflex only on the right foot indicates a decrease in the rate of transmission of the nerve impulse, on the left leg this index decreased;
- an increase in the threshold for the appearance of a response of slow M-fibers in both the right and left legs, which indicates a decrease in their excitability;
- increased latent time of inducted contraction of slow M-fibers of the right leg and a decrease in this index for the left leg;
- increase in the threshold of occurrence of fast M-fibers of both right and left legs.

- The latent time of induced contraction of the fast M-fibers of the right leg did not change and a slight improvement for the muscles of the left leg revealed.

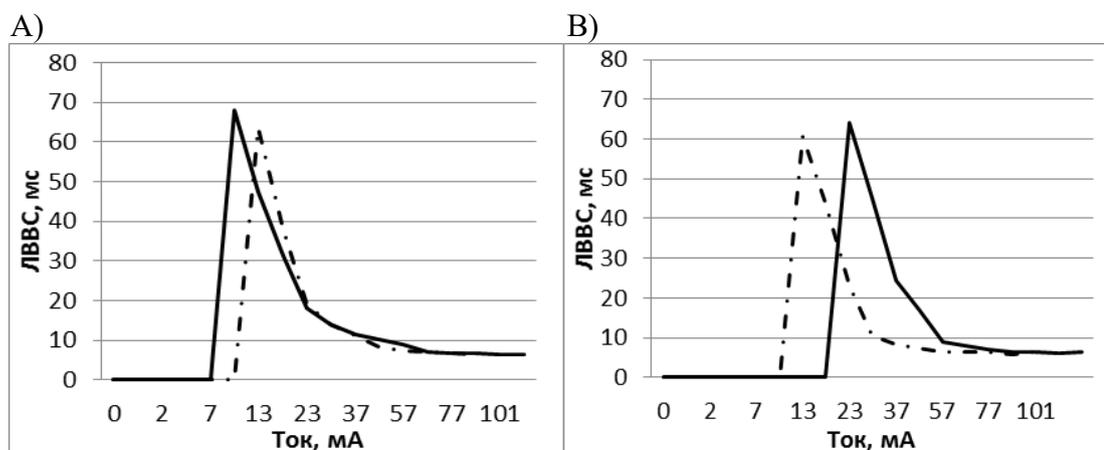


Fig.1 Latent time of induced contraction of wingman before and after the training session with speed-strength orientation

Note: ——— - before training - - - - - after training

A) – right leg, B) -left leg.

Thus, for the wingman, we observed a deterioration in all indicators reflecting the state of the conduction nerve pathways and deterioration of the muscles of the right leg (jogging leg). It can be assumed that this is due to the specifics of the role in the performance of training assignments, namely short-term accelerations, switching from protective actions to rapid attacks, etc. demands higher requirements for NMA.

To improve the functional state of the conductive neural pathways, we recommended, if possible, increase the rest intervals between the series of exercises, and in the final part of the session perform a set of stretching exercises, include the elements of ideomotor exercises in the training session, which will help normalize studied parameters.

Pivot. This player tends to intermingle with the defense, setting picks and attempting to disrupt the defense's formation. This position requires the least jumping skills; but ball control and physical strength are an advantage.

In the course of the study, the following changes in indices were revealed (Fig. 2):

- the thresholds for the appearance of H-reflexes after speed-strength training have decreased for both the right and left legs, which may indicate a stimulating effect of training;
- the thresholds for the appearance of the M-response of both fast and slow M-fibers have grown, which indicates a decrease in the excitability of muscle fibers after the athlete performs a speed-force load;
- Latent time of induced contraction of slow M-fibers of the right leg have grown, and the left ones have decreased, we assume that this may be one of the manifestations of motor asymmetry;
- Latent time of induced contraction of fast M-fibers of the right leg grew, and on the left leg they were not expressed before and after the training. We assume that the lack of response of fast motor units can be caused by a number of reasons: overfatigue of the athlete (independent additional strength training), peculiarities of the exercises (the position game is more stressful for pivots).

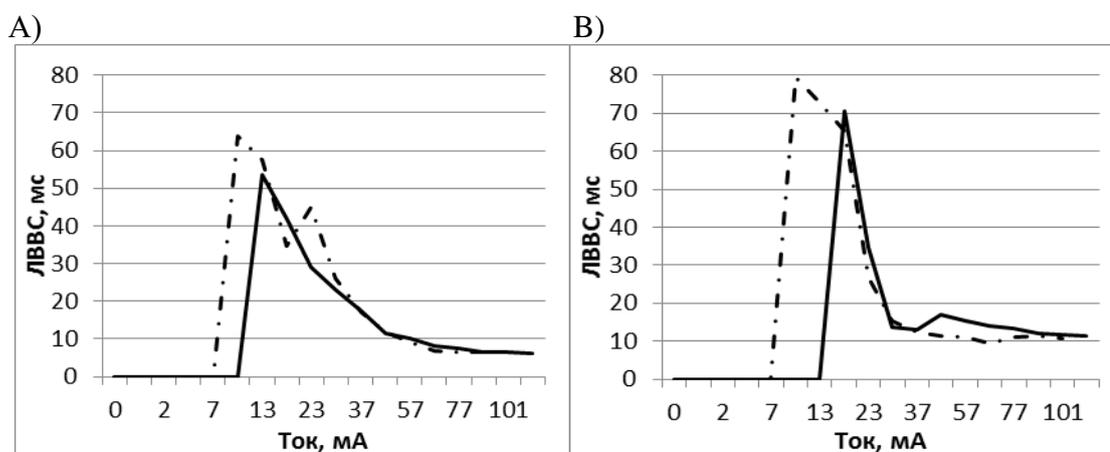


Fig.2 Latent time of induced contraction of pivot before and after the training session with speed-strength orientation

Note: — - before training - . - . - after training
A) – right leg, B) -left leg.

Thus, for the pivot we observe fatigue of the muscular component of the neuromuscular apparatus, especially the fast M-fibers of the left leg. Perhaps one of the factors that caused this condition was the conduct of active power struggle during the positional game, both in defense and in attack, as well as additional independent strength training.

The athlete is recommended a set of restorative measures, reducing the intensity of training for a while, refusing additional self-employment, since the lack of response of fast M-fibers of the left leg may indicate chronic fatigue, or the onset of development of pathological processes.

Centre backcourt. A player with experience is preferred on this position who acts as a playmaker and the handball equivalent of a basketball point guard.

In the course of the study, the following changes were identified (Fig. 3):

- the thresholds of the appearance of the H-reflex, as well as the M-response of fast and slow M-fibers of both right and left legs decrease, which indicates an increase in the excitability of nerve fibers and the muscles themselves. We believe that this is due to the fact that the load had a stimulating effect on the athletes' NMA;
- Latent time of induced contraction of slow M-fibers remained practically unchanged;
- Latent time of induced contraction of high-speed fiber has decreased, which indicates an increase in the functional state of this component of NMA.

Centre backcourt playing the role of the organizer of the team members, both in defense and in the attack in the process of the game. This puts high demands on the CNS, namely, the ability to quickly assess the game situation, to take and implement timely and effective solutions. We note an improvement in the functional state of the NMA, and especially indicators reflecting the activity of the nerve component, which indicates the high mobilization of the relevant structures in the training session.

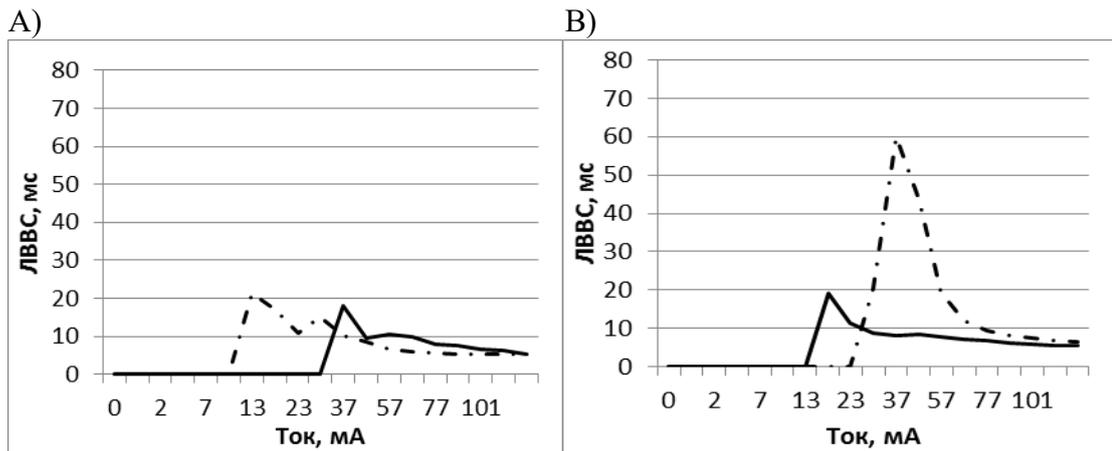


Fig.3 Latent time of induced contraction of centre backcourt before and after the training session with speed-strength orientation

Note: ——— - before training - - - - - after training
 A) – right leg, B) -left leg.

Improvement of the functional state of the NMA after the training session at the centre backcourt shows that the load for this athlete is chosen optimally and correction of the training process is not required.

Left and right backcourt. Goal attempts by these players are typically made by jumping high and shooting over the defenders. Thus, it is usually advantageous to have tall players with a powerful shot for these positions.

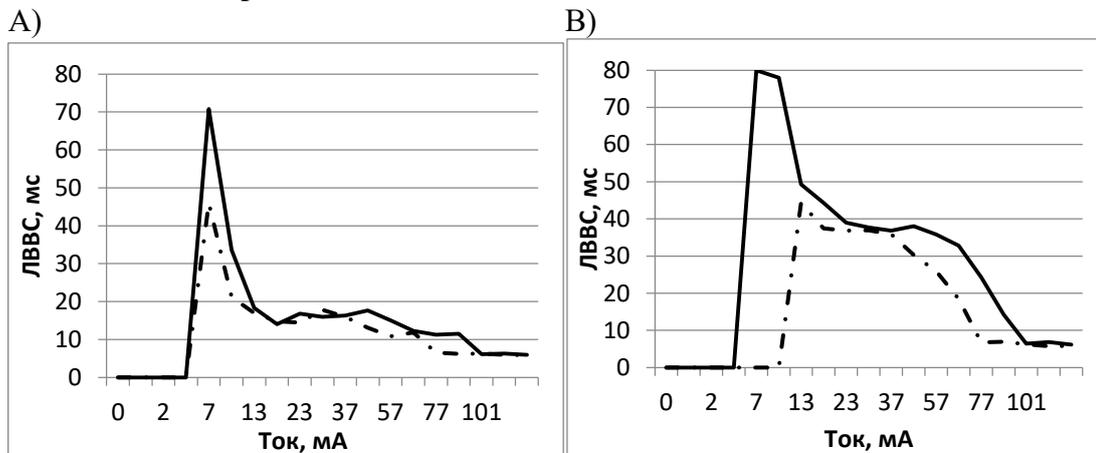


Fig.4 Latent time of induced contraction of centre backcourt before and after the training session with speed-strength orientation

Note: ——— - before training - - - - - after training
 A) – right leg, B) -left leg.

In the course of the study, the following patterns were revealed (Fig. 4):

- the thresholds of the appearance of the H-reflex increased both on the right (insignificantly) and on the left leg;
- the threshold of the appearance of the M-response of slow fibers of the right leg grew insignificantly, remained unchanged on the left leg;
- Latent time of induced contraction of slow M-fibers of the right leg did not change, and grew for left leg, which can indicate a state of fatigue of the muscles;

- the threshold for the appearance of the M-response of fast M-fibers remained practically unchanged, while the latent time of inducted contraction of fast M-fibers decreased on both the right and left legs, which may indicate an increase in the functional state of the muscle fibers.

Fatigue of slow M fibers in improving the state of fast M-fibers is probably not directly related to this training session, since the recovery period of slow M-fibers (in training with considerable and heavy load) can be up to 2-3 days, the results obtained can be explained by the trace effect from previous workouts. For backcourt, we recommended to reduce the overall intensity of the training process, as well as active low-intensity rest after training.

Conclusion. In the course of the research, an individual reaction of the neuromuscular system to the load of the speed-strength directivity was revealed. Based on the indicators of objective control of the condition of the NMA, practical recommendations have been developed that contribute to the individualization of the training process of handball players of different playing roles and help to reduce the probability of fatigue in athletes and improve the efficiency of the training process

References

1. Akselrod A. E. Sposob izmereniya vremennykh parametrov vyzvannogo sokrashcheniya myshts [Method of measuring the temporal parameters of induced muscle contraction] // Problemy sovershenstvovaniya olimpiyskogo dvizheniya, fizicheskaya kul'tura i sport v Sibiri [Problems of improving the Olympic movement, physical culture and sport in Siberia]. – Omsk. 1999. P. 57-58. [In Russian]
2. Akselrod A.E. Sposob issledovaniya nervon-myshechnogo apparata [A method of studying the neuromuscular apparatus] // SibGAFK. Nauchnyye trudy. Yezhegodnik [Siberian State Academy of Physical Education. Scientific works. Yearbook]. – Omsk. 2001. P. 130-132. [In Russian]
3. Dubrovskiy V.I. Sportivnaya fiziologiya: uchebnik dlya sredn. i vyssh. ucheb. zavedeniy po fiz. kul'ture [Sports physiology: a textbook for secondary schools and higher education institutions in the physical education]. M.: VLADOS [Moscow: VLADOS]. 2005. 462 p. [In Russian]
4. Konovalov V.N., Rudenko I.V., Pavlov G.K. Otsenka funktsional'nogo sostoyaniya nervno-myshechnogo apparata yunyh khokkeistov v trenirovochnom protsesse [Evaluation of the functional state of the neuromuscular apparatus of young hockey players in the training process] // Vestnik Federatsii khokkeya Rossii [Herald of Federation of Hockey of Russia] № 1. – M.: Chelovek [Moscow: Human], 2015. Vol. 1. P. 6-15 [In Russian]
5. Koryak Yu. A. Funktsional'nyye svoystva nervno-myshechnogo apparata sportsmenov raznykh spetsializatsiy [Functional properties of the neuromuscular apparatus of athletes of different specializations] // Fiziologiya cheloveka [Human physiology]. 1993. № 5 (T.19). P. 95-104. [In Russian]
6. Rudenko I.V., Konovalov V.N. Dinamika LVVS pri vypolnenii razlichnoy trenirovochnoy nagruzki u legkoatletov-sprinterov [Dynamics of latent time of inducted contraction in the performance of various training loads of athletes, sprinters] // Problemy sovershenstvovaniya fizicheskoy kul'tury, sporta i olimpizma v Sibiri: Materialy Vserossiyskoy nauchno-prakticheskoy konferentsii molodykh uchenykh [Problems of improving physical culture, sports and Olympism in Siberia: Proceedings of the All-Russian Scientific and Practical Conference of Young Scientists]. -Omsk: SibGUFK [Siberian State University of Physical Education and Sports], 2005. – P. 137-138. [In Russian]
7. Povareshchenkova J., Andriyanova E., Petrov D. Neurophysiological mechanisms of leg muscles efferents excitability control // Book of Abstracts of the 13th Annual Congress of the European College of Sport Science. – Portugal, 2008. – P. 399.

INFLUENCE OF TWO SIDES OF SKILL OF HIGHLY QUALIFIED FIGURE SKATERS UPON EVALUATION OF THEIR COMPETITION PROGRAMS

Zibrova E.Yu.

Moscow State Academy of Physical Culture (MGAFK)

Moscow, Russia

e-mail: kat_zibrova@mail.ru

Coordinator: Ph.D., Ped. Sci., Associate Professor Torunova E.L.

Abstract. Two sides of figure skaters' skill (technical and artistic-aesthetic) are reflected by the corresponding awarded marks, "for movements" and "for components". The method of ranking, applied for the first time, revealed the problem of reliability in the performance of two types of competition programs - short and free – performed by highly skilled skaters.

Keywords: figure skating; shot program; free skating; marks "for movements" and "for components"; 22nd Winter Olympics; computer technologies.

Figure skating is attractive for its two-sidedness, technical complexity and artistic and aesthetic design. Athletes compete in two types of programs: short program (SP) and free skating (FS). The modern assessment system comprises different methods of assessing each side of the skater's skill. The first mark is "for movements", the second is "for components".

Problem. It is difficult to determine in what skill each skater has an advantage, and where a gap from the level of this contingent of participants is, thus the systematization and processing of the results presented in the protocols are required.

Hypothesis. It is assumed that the analysis of each of the two marks with the help of modern computer technologies will allow us to concretize important aspects, to see more clearly the training reserves of highly skilled skaters, and to outline the directions for further improvement.

The **aim of the study** is to determine and compare the skill level of the skaters by the results of their performance in two types of the program (short and free) for each of the two marks ("for movements" and "for components").

Methods of research: pedagogical observation and recording, analysis of literature, technical requirements and competition protocols, video recording, the method of systematization, groupings and mathematical-statistical processing of results (ranking), graphic display of information.

Frame of the research

- The research was conducted during 22nd Winter Olympics;
- The figure skaters' performance (short and free program) was analyzed (24 strongest figure skaters);
- Pedagogical observation (video);
- Analysis of protocols.

In the course of the research it was necessary to solve a number of **tasks**: the acquisition of knowledge of the referee methodology, knowledge of the requirements for the performances of figure skaters (ISU Communiqué), the study of the possibilities of obtaining results (protocols) from the ISU website, the use of computer processing of the results (Excel), the definition of skill level for each component and the degree of their reflection in the marks awarded by referees, the comparison of the results in each of the two programs "for movements" and a similar comparison of the marks "for components" (by the ranking method).

Characteristics of the marks "for movements" and "for components"

"For movements" mark:

- Clearly formalized;
- Every movement has a certain value;
- Each error is penalized, and each successfully executed element is encouraged by the referees in accordance with the SOV table.

“For components” mark:

- Less clearly formalized;
- Referees score points on the 10-point scale in 0.25 increments for each of the five components of the program;
- Five components are evaluated:
 - skating skills;
 - transitions;
 - performance;
 - choreography;
 - interpretation.

Considering the importance of each side of the skill of figure skaters, it is useful to orient upon the level of mastery of the strongest figure skaters of the world, Winter Olympics participants.

“For movements” and “for components” marks of each athlete are reflected in the competition records (an extract from the SP protocol see Table 1).

Table 1

To compare the marks “for movements” in the SP with similar marks in the FP and to separately compare the marks for components in each program, a ranking was performed. The results are presented in graphical form (Figs. 1 and 2).

Pl.	Qual.	Name	Nation	TSS =	TES +	PCS +	SS	TR	PE	CH	IN
1	Q	KIM Yuna	KOR	74.92	39.03	35.89	9.04	8.61	9.11	8.89	9.21
2	Q	SOTNIKOVA Adelina	RUS	74.64	39.09	35.55	8.82	8.57	9.11	8.89	9.04
3	Q	KOSTNER Carolina	ITA	74.12	37.49	36.63	9.00	8.79	9.36	9.25	9.39
4	Q	GOLD Gracie	USA	68.63	36.55	32.08	8.04	7.71	8.14	8.04	8.18
5	Q	LIPNITSKAYA Yulia	RUS	65.23	33.15	33.08	8.43	8.07	8.14	8.43	8.29
6	Q	WAGNER Ashley	USA	65.21	31.43	33.78	8.39	8.11	8.61	8.50	8.61
7	Q	EDMUNDS Polina	USA	61.04	32.98	28.06	7.11	6.71	7.21	6.93	7.11
8	Q	SUZUKI Akiko	JPN	60.97	28.71	32.26	8.18	7.79	8.00	8.11	8.25
9	Q	MEITE Mae Berenice	FRA	58.63	30.83	27.80	7.07	6.64	7.04	6.93	7.07
10	Q	WEINZIERL Nathalie	GER	57.63	31.94	25.69	6.50	6.14	6.57	6.36	6.54

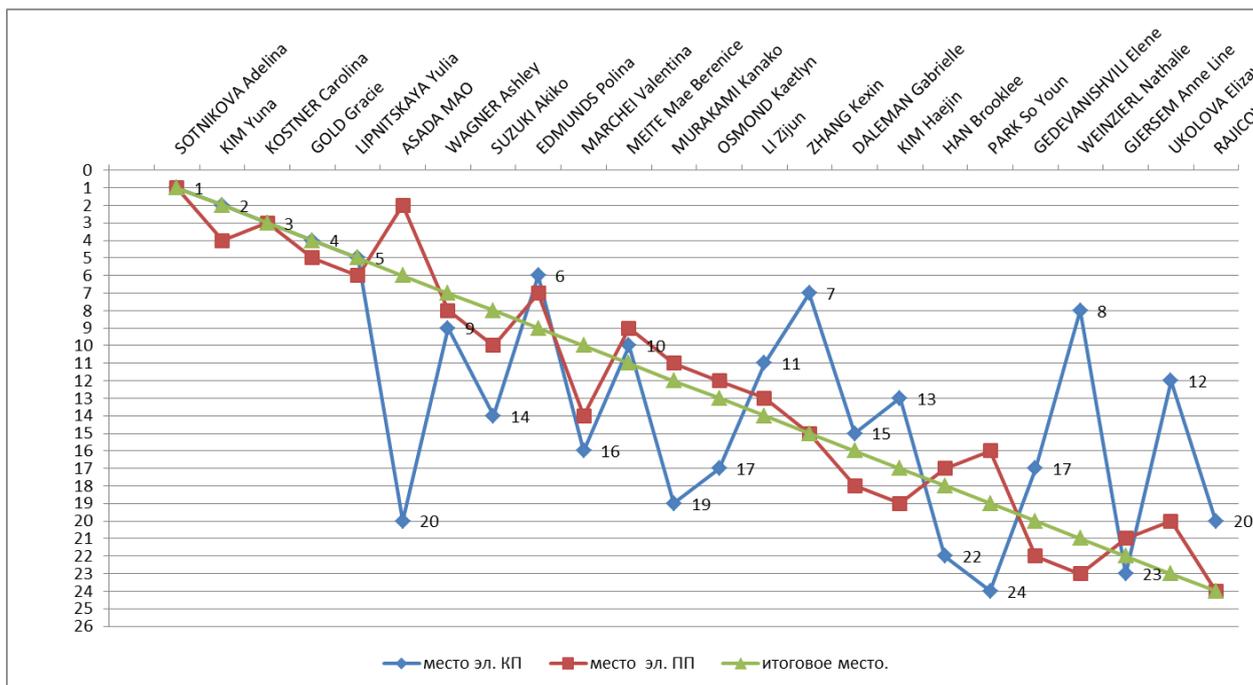


Fig.1 Ratio in places by the marks “for movements” in the short program and free skating (blue – place for movements in the SP, red – place for movements in the FS, green – final place)

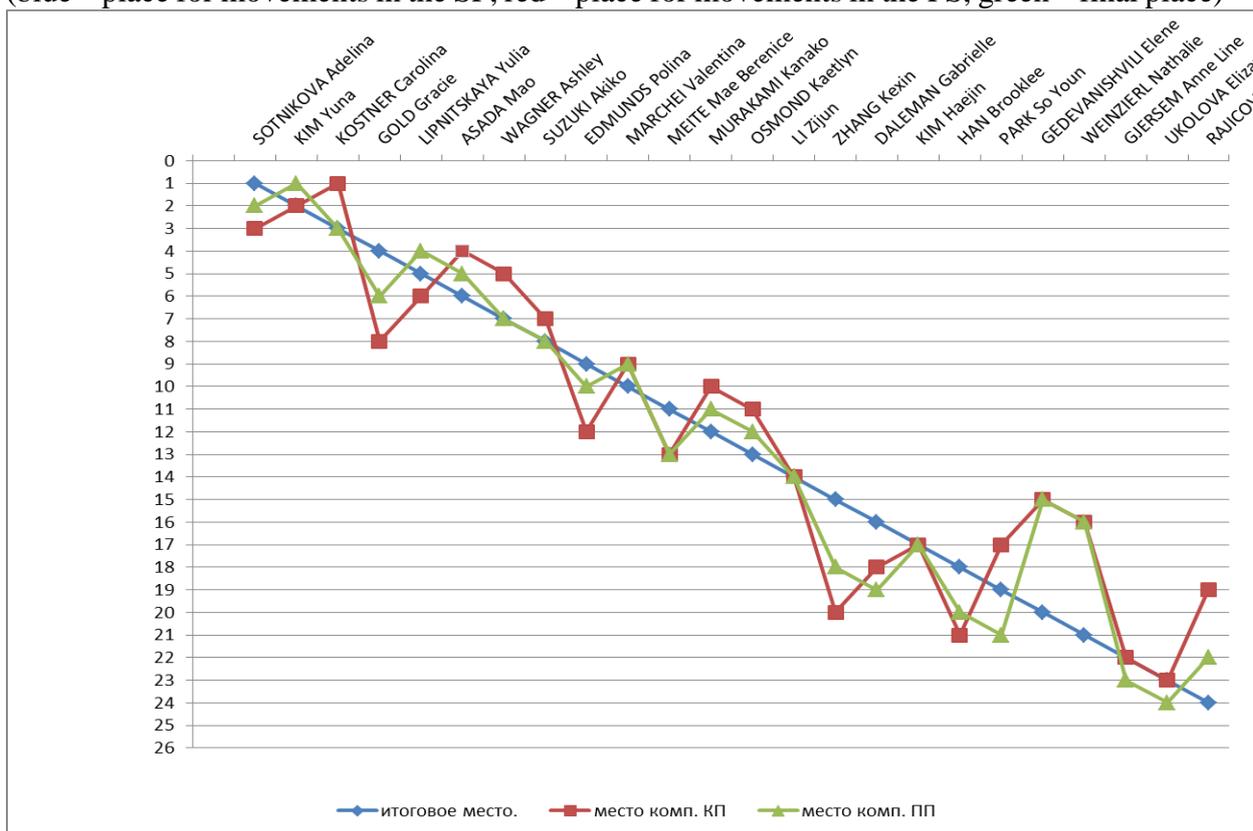


Fig.2 Ratio in places by the marks “for components” in the short program and free skating (blue – final place, red – place for components in the SP, green – place for components in the FS)

Conclusions:

The analysis of the 22nd Winter Olympics protocols has revealed a huge spread in the places in comparison of the marks “for movements” both in the short program and free skating (6-8 to 18 places of Mao Asada; the 20th place in the short program, the 2nd place in free skating). This indicates the severity of the problem of reliability in performing technically complex elements by highly skilled skaters during the competition.

It is important to note that the range of variation among leaders (1 to 5 places) is within 2 places. Among those leaders are Russian figure skaters Adeline Sotnikova and Julia Lipnitskaya.

By the results of the analysis of marks awarded to the participants of the 22nd Winter Olympics, it has been found that the problem of the quality of the artistic design of programs is less acute. The range of variation in places between the short program and free skating is 2 places at maximum, and 3 places in one case.

The modern system of estimating figure skaters’ skills is constantly improving towards preserving the value of both sides of their skill (technical and artistic). To win, a higher level of skill in each of the two becomes more and more significant.

The computer technologies and the proposed ranking technique allow analyzing the results of the competition in more detail, which lets us to a more deep understanding of the skill details.

EXPERIENCE OF IMPLEMENTING HEALTH-FORMING TECHNOLOGIES INTO PHYSICAL EDUCATION OF PRIMARY-AGED SCHOOL CHILDREN

Goncharova N., Nosova N., Butenko H.

*National University of physical education and sport of Ukraine
Kiev, Ukraine*

e-mail: nata_infiz@mail.ru

Coordinator: Oleksandr Dovzhenko Hlukhiv national pedagogical university,

Abstract. Based both on the data from scientific and methodological sources and own practical experience, the publication represents definitions regarding the activity in forming and protecting health of primary-aged school children during physical education. The health-forming technology, based on the means of health tourism as a tool of positive influence on physical health of primary-aged school children was introduced, its effectiveness was proved.

Key words: health, primary-aged school children, health tourism.

Introduction. Pedagogical process of physical education includes complex performance of recreational activity, which primarily aims to implement the technologies of preventing negative influence of risk factors into pedagogical activity concerning health protection (Goncharova N. et al, 2016). This process involves obligatory consideration of children's functional capabilities, individual peculiarities of their reaction on the conditions of educational environment (Biryukova, 2006, Pyechka, 2016).

Nowadays, the significant factor of increasing the quality of general secondary education is performing school education on the base of health protection (Vitchenko, 2013). The process of physical education is the one, based on health protection of schoolchildren and possessing the range of tools to form healthy personality (Chin, et al, 2014; Dreiskaemper, 2015).

While creating an idea of health-forming and health-protecting technologies during physical education, it is necessary to define their main types:

– health-improving technologies– technologies, targeting to improve a person's physical conditions, increase health potential: physical training, physiotherapy, aromatherapy, cold training, gymnastics, herbal therapy, musical therapy;

– health education technologies mean hygienic education, forming performance-based skills (controlling emotions, solving conflicts, etc.), accidents, psychoactive substance abuse prevention, sexual education;

– technologies of health culture education involve developing the person's qualities which contribute to protecting and improving health, forming perception of health as value, strengthening motivation to keep healthy life-style, increasing responsibility for personal health and health of the family;

– health protection technologies – technologies that create safe conditions for alteration, person's studying and working, and those that solve tasks of rational organization of educational process (taking into consideration age, gender, individual peculiarities and hygienic norms), correspondence of study load and exercise load with a child's capabilities (Voronin, 2006);

– health-forming technologies mean purposeful recreational humanistic, personality-centered interaction of a teacher and a schoolchild, a lecturer and a student, a coach and an athlete etc., that involves the complex of means, techniques, aimed at forming, protecting, strengthening, restoring person's health (Anastasova, 2014);

– recreational technologies, which is the complex of procedures, techniques and tools, using which provides possibilities to display person's active attitude, depending on age peculiarities, interests, physical abilities and personal advantages and aimed at increasing culture of everyday

life and forming healthy life-style; contribute to physical and spiritual rehabilitation, maximum development of a person's initiative and independence, which relieve work, mental and intellectual load, promote social activity and build perfect conditions for person's creative self-expression (Krutsevych et al, 2013).

A special place among the technologies, oriented to forming schoolchildren's health, is taken by health-forming technologies.

The researchers considered possibility to use various means of physical education in order to perform health-forming activity. For instance, the effectiveness of using Ukrainian folk dance in increasing the level of physical fitness and health protection in primary-aged school children was proved (Olefrenko, 2013). Variety of means for protecting children's health are supported by usage of modern means of health-related fitness (Nordic walking) (Sainchuk, 2015).

To our mind, health tourism has huge potential for improving children's health. Different means, various conditions for conducting lessons, social interaction of tourist group members make it irreplaceable for forming school children's health. However, the analysis of scientific and methodological sources speaks for little experience in performing lessons in health tourism in physical education process in order to improve health.

Purpose: to develop the health-forming technology, based on the means of health tourism, oriented to increasing the level of primary-aged school children's physical health and test its effectiveness.

Tasks:

1. To analyze the approaches to forming and protecting school children's health by the data from scientific and methodological sources.
2. To develop and test the effectiveness of the health-forming technology, based on using the means of health tourism.

Research methods: analysis of scientific and methodological sources, physical assessment of children.

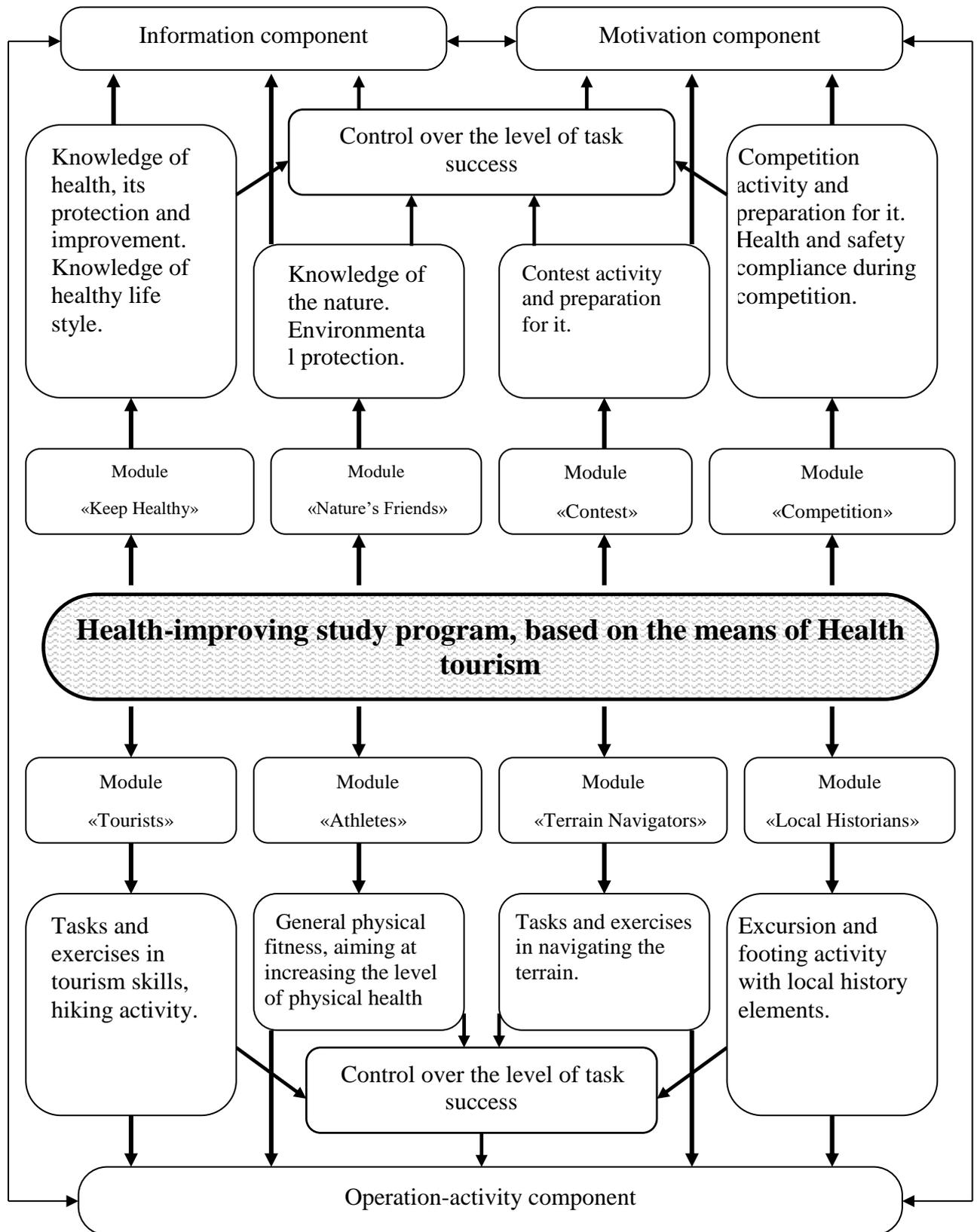
Results of the research and their discussion. Based on the analysis of the data from scientific and methodological sources and the experience of work in the field of physical education, the health-forming technology, based on the means of health tourism was developed. The aim of the technology is to increase the level of physical health in primary-aged school children. Besides health-improving tasks, performing the complex of educational tasks and forming motivation for independent health-improving activity are provided:

- improving chances to catch new kinetic experience, developing motor skills;
- developing children's knowledge of healthy life-style, physical fitness and sports, natural environment and the rules of behaving there, influence of motor activity and physical exercises on a person's health;
- promoting mental activity as a result of introducing creative tasks;
- forming strong motivation for participating in health-improving programs, increasing the level of school children's motivation, improving the level of health state, activity and well-being;
- increasing the level of physical and functional development, level of body's adaptive and spare capacity, physical efficiency, physical fitness, development of kinetic qualities;
- improving the level of body's resistance to negative factors of the environment;
- rising the level of physical health;
- building the skills of social activity and norms of behavior.

The offered health-forming technology matches the criteria of designing the system of health-improving activity: scientific validity, systemacity, structural properties, controllability, efficiency, effectiveness, reproducibility (Andreieva, 2015) and approaches to the correction of physical state (Kashuba et al, 2010). The structure of the technology as a system includes

interrelated components: motives, aim, content, operations, result and reflection, as defined by the recommendation of O.Yu.Anastasova (2014).

Fig. 1. The structure of the health-improving study program, based on the means of health tourism for primary-aged school children



As a part of the technology, the study program, based on the means of health tourism, was developed (its general structure is represented in Fig.1). The level of work load, provided by the technology, was defined according to the level of children's physical fitness.

Children with low and below the average level of physical fitness mainly were doing the exercises of aerobic type of low and medium intensity, and exercises for developing motor qualities with fewer sets per exercise and repetitions.

Children with average and above average level of physical fitness were doing the exercises of aerobic type of medium and high intensity, and exercises for developing motor qualities with more sets per exercise and repetitions.

Physical exercises, both general (including the complexes of combined developing exercises) and special ones were being performed mainly in motion (including doing physical exercises during walks, excursions and hikes) in order to form aerobic endurance. At the same time positive emotional mood, which is the core component of keeping high motivation level, was kept.

Differentiation of exercise load was brought into action by: easing the conditions of doing exercises, reducing the number of sets and duration of doing exercises, changing the speed of doing exercises, shortening the stage length or distance.

Effectiveness of the health-protecting technology was defined during pedagogical experiment. Two groups of children – experiment group (EG) and control group (CG) – of 20 children each were formed. Children in EG were having classes by the technology we developed. Children in CG were attending the circle as a part of out-of-school facility by the program “Young Tourists-Local Historians”, developed by the Ukrainian State Center of Tourism and Local History and the Scientific and Methodological Committee in Out-of-School Education. Lessons in EG and CG were held three times a week for two hours each.

The main technology effectiveness criterion was the parameter of the level of children's physical health.

At the beginning of educational experiment there were 15% (n=3) children with average physical health level (PHL), with the ratio of boys – 5% (n=1) and girls – 10% (n=2). There were 20% (n=4) of primary-aged school children (4 boys) with the below average PHL. There were 65% (n=13) children, among which there were 25% (n=5) boys and 40% (n=8) girls, with the low PHL.

At the end of the experiment we recorded 1 girl with above average PHL, which is 5% of the total number of children, and significant increase in number of children with average PHL up to 50% (n=10), with 30% (n=6) ratio of boys and 20% (n=4) – of girls. We as well recorded the increase in the number of children with below average PHL up to 30% (n=6), with 10% (n=2) ratio of boys, and 20% (n=4) ratio of girls. At the same time we recorded significant reduction of the quantity of children with low PHL down to 15% (n=3), with 10% (n=2) ratio of boys, and 5% (n=1) ratio of girls.

In children from CG with average PHL at the beginning of the educational experiment there were 15% (n=3) of primary-aged school children, where the ratio of boys was 10% (n=2), the ratio of girls was 5% (n=1). 35% (n=7) (25% (n=5) boys and 10% (n=2) girls) of children with PHL below average were recorded. Low level of PHL was recorded in 50% (n=10) children (10% (n=2) boys and 40% (n=8) girls).

At the end of the experiment we recorded the increase in number of children with average PHL up to 55% (n=11), with 30% (n=6) boys and 25% (n=5) girls. At the same time we recorded reduction of the quantity of children with PHL below average down to 25% (n=5), with 15% (n=3) ratio of boys, and 10% (n=2) ratio of girls, as well as reduction of the quantity of children with the low PHL down to 20% (n=4), with 5% (n=1) ratio of boys, and 15% (n=3) ratio of girls. Children with PHL above average were not found.

Thus, during health-improving activity 100% (n=20) children in EG either improved PHL, or increased grades of PHL up to upper limit values, whereas in children from CG such changes were not so obvious.

Conclusions. Nowadays health condition of children in Ukraine demands introducing effective means of forming and protecting young generation's health. The variety of means of physical education, which are used in health-improving activity, contributes to forming children's interest to physical education, one of which is health tourism. The developed health-forming technology was held in three stages: preparatory, main and final.

Health-improving study program, developed within the technology, consists of three components: information, motivation and operation-activity ones, aimed at improving physical health of primary-aged school children by means of health tourism. Testing effectiveness of the technology developed proves its positive influence on physical health of primary-aged school children.

References:

Anastasova O. YU. (2014) *Pidhotovka maybutnikh uchyteliv fizychnoyi kul'tury do Vprovadzheniya zdorov'yaformuval'nikh tekhnolohiy u navchal'no-vykhovnyy protses zahal'noosvitn'oyi shkoly: dis. kand. ped. nauk* [Training of future teachers of physical culture to the introduction health-forming technologies in the educational process of secondary school: PhD diss.]. Berdyansk. 257 p. (in Ukr.).

Andrieieva, O. (2015). "Prerequisites for the development of the conception of recreational and health promoting activities of different population groups". *Theory and methods of physical education and sports*, 1, 11-15 (in Ukr.): http://tsushko.tutdomen.com/tmfvs/article.php?file=archive%2Fxml%2F19927908_2015_2015_1_unicode.xml&pages=11-15&lang=ukr

Andrieieva O., Galan Y., Hakman A. & Holovach I. (2017). Application of ecological tourism in physical education of primary school age children. *Journal of Physical Education and Sport*, Vol 17, Supplement issue 1, pp. 7-15. doi:10.7752/jpes.2017.s1002

Biryukova N.A. (2006). "Health-saving technologies in general education institutions" *Gigiyena i sanitariya* [Hygiene and sanitation], 1, p. 76-77 (in Russ.)

Chin M.K. & Edginton, Ch. R. (eds.) (2014). *Physical Education and Health. Global Perspectives and Best Practice*. Urbana/IL: Sagamore.

Dreiskaemper D. & Naul R. (2015). Healthy children in sound communities – four cohorts of longitudinal intervention project in primary schools. *Revista Espanola de Education Fisica y Deportes*, No. 410, supl LXVII, p.466.

Goncharova N., Butenko H. & Usychenko V. (2016). "Features motion activity of primary school-aged children". *Sports Bulletin of the Dnieper*, 3, pp. 39-42, (in Ukr.): http://www.irbis-nbuv.gov.ua/cgi-bin/irbis_nbuv/cgiirbis_64.exe?I21DBN=LINK&P21DBN=UJRN&Z21ID=&S21REF=10&S21CNR=20&S21STN=1&S21FMT=ASP_meta&C21CO M=S&2_S21P03=FILA=&2_S21STR=svp_2016_3_9

Kashuba V. & Goncharova N. (2010). "Assessment of the physical state: problems, solutions". *Sports Bulletin of the Dnieper*, 2, pp.120-123, (in Russ.): file:///C:/Users/TEMP.UNI-SPORT.001/Downloads/svp_2010_2_36.pdf

Krutsevych T., Andrieieva O. (2013) "The theoretical basis of research of physical recreation as a scientific problem" *Sports Bulletin of the Dnieper*, 1, pp. 5-13, (in Ukr.): http://nbuv.gov.ua/UJRN/svp_2013_1_2

Olefrenko K.O. (2013). "A healthy lifestyle means of Ukrainian national dance in primary school children" *Visnyk Chernihivs'koho natsional'noho pedahohichnoho universytetu. Pedahohichni nauky* [Bulletin of the Chernihiv National Pedagogical University. Pedagogical Science], 112.3, pp. 267-269 (in Ukr.)

Pyechka L. (2016). Continuity in the kindergarten and primary school in the implementation of the contents of laying the foundations of individual value attitude to their own health. *Journal of Vasyl Stefanyk Precarpathian National University*. Vol. 3, 2-3 (2016), pp. 106-113.

Sainchuk O. M. (2015) Prohramuvannya fizkul'turno-ozdorovchykh zaynyaty skandynavs'ka khod'ba u fizichnoho vikhovanni molodshyy shkolyariv: *dys. ... kand. nauk z fiz. vykh ta sportu*[Programming of Nordic walking fitness classes in physical education of primary schoolchildren: PhD diss.]. Kiev. 233 p.(in Ukr.).

Vitchenko A.M. (2013). "To the problem of health preservation and strengthening primary school pupils by the methods of breathing exercises" *Visnyk Chernihivs'koho natsional'noho pedahohichnoho universytetu. Pedahohichni nauky* [Bulletin of the Chernihiv National Pedagogical University. Pedagogical Science], 108.2 (in Ukr.): http://nbuv.gov.ua/UJRN/VchdpuP_2013_2_108_7

Voronin D.Ye. (2006) *Formuvannya zdorov'yazberihayuchoyi kompetentnosti studentiv Vyshchykh Navchal'nykh Zakladiv zasoby fizychnoho vykhovannya: dis. kand. ped. nauk* [Formation of competence of health-forming college students by means of physical education: PhD diss.].Melitopol. 222 p. (in Ukr.).

THE USE OF INFORMATION AND COMMUNICATION TECHNOLOGY MEANS IN PHYSICAL EDUCATION AND SPORTS CLASSES

Rusănescu Alina-Gabriela

National University of Physical Education and Sports (NUPES)

Bucharest, Romania

e-mail: alina_rusanescu@yahoo.com

Abstract. In the technological current context, the Information and Communication Technology (ICT) through their ability to advance the limits of space and time, favors a faster adaptation to labor market requirements and demands.

The widespread computerization in all the fields makes the specialists to be able to deal with modern practical operating systems, platforms, and different software. Having all this, it appears for the physical education teachers the necessity to modify their conception on the way they teach.

In order to enhance physical education learning process to a higher level, the teachers must take into consideration the use of information technology on a large scale: planning process, presentations, organization of the lesson, teaching new contents or execution errors correction.

Keywords: ICT, physical education and sports, teacher

Introduction. In the current context the whole process of the physical education (PE) class pedagogically directed from the beginning of the basic training and until the moment when the student reaches the level of some superior performances produces the best results only if the work of the teacher is systematic, methodical, purpose oriented, but also electronically analyzed and structured.

We live in a society in which more and more tasks are computer accomplished. The totality of instruments that belong to Information and Communication Technology are well-known under the name of ICT.

The approach of programming, of elaborating planning documents for PE using ICT means will help the teacher to present more organized and efficacious the activities particular to this field. M. Stănescu, M. Stoicescu & C. Ciolcă (2011) say that: “Teaching will get new dimensions, as lessons will be greatly enhanced by the technology tools. The use of multimedia instructional tools will significantly enrich the teaching content that will become more dynamic and captivating.”

The presentation of various topics, which apparently look boring or difficult for the students, using attractive language, with the help of colorful images and even various sounds will catch their attention and make understanding easier.

Purpose. The aim of this paper is to present a general view on the main characteristics of the ICT resources integration in the physical education and sports lesson.

Topic. In the context of physical education and sports, ICT determines the facilitation and improvement of the learning-consolidation-perfecting process. Knowing how to use an informatics instrument - computer operating; elaboration, administration and presentation of documents – represents, like in the other fields, a professional attitude, making possible data storage and analysis, competent statistics or predictions regarding sports people’s evolution.

Nowadays, being a teacher no longer means limiting yourself to traditional teaching-learning methods, but it implies an extension of competences by adding new dimensions, like that of information and communication technology. The use of these favors the growth of lesson

attractiveness through various topic-specific audio-visual aids, but also through the use of the virtual medium.

For a better understanding of the necessity for using the audio-visual aids in the PE class, T. Roibu (1994), offers a classification of the materials that can be used in instruction:

Audio means: *Rythmical or classical music*, through the use of the pick-up, tape-recorder, loud speakers, video disk, computer, DVD and a correct setting of the speakers for a discreet, quality audition, can be used during classes in order to create a pleasant ambiance. *Orchestral music* in a slow, calm rhythm, using the same devices mentioned above, can be used during the recovery after effort. *Rhythmic music*, carefully and correctly chosen can help to set a matching rhythm/pace for the exercises. *Recording the sounds* made during practice can be used to study the exercises' rhythm, and also to compare it with the rhythm set by the teacher or metronome.

Visual means: *Illustrative static materials* – all the fixed, motionless didactic material that can be presented on drawings, screens, posters, pictures. *Photographic image*: in PE images can highlight or focus on defining issues, a fact that can facilitate a much faster learning of technical procedures specific to sport types. *The slide* is an image transposed on celluloid, which subsequently is put into frames with or without glass for protection. *Kinograma* is the effect of the transposition of selected images on a photographic or cinema film on photographic paper. This procedure is especially used in the study of fast movements that require a longer subsequent analysis. *Video image* leads to an objectivization of the pedagogical process, to the correct forming of the senses and perceptions regarding the execution/practice. *Films on magnetic support or tape* are made, in the case of PE, for educational purpose. This is the advantage of combining image, sound and movement in a logic-filled activity that easily impresses the students' memory. Through the use of *methodical films* we introduce ideas that suppose movement, that cannot be transmitted otherwise and that captures students attention throughout the presentation, stimulates movement; they can show processes that are invisible to the human eye; they allow for the replay of a movement as many times as it is necessary.

There can be identified several advantages of using ICT instruments in PE (L. Vasile, 2009):

- access, selection and processing of information (texts, videos/video-taped images, photos, kinograms, planning documents etc.) regarding the PE teacher's activity determines his/her autonomy;
- the automatic recording of results, reduction of examination stress, resource economy (time, paper etc.), flexibility, now when the multitude of information or the mental and manual counting delays decisively the results indispensable to the solution finding and correct adoption of some methodological decision;
- predicting the evolution of students and expressing the operational objectives;
- evaluating the precision of execution by comparison with some corresponding models or with the execution of some other classmates;
- stimulating creativity by adapting the ideas conveyed with the help of ICT to their own personality and imagination;
- restructuring execution to better the quality and efficacy of these.

The Microsoft Office Package includes several applications that can help the didactic process during the PE class:

- Microsoft Word (Johnson, S., 2008) is a text processor that the PE teacher can use to write the planning documents: semestrial planning, unit planning, lesson plan.

LESSON PLAN						SEMESTRIAL PLANNING					
Educational establishment: Class: Date: Class effective: Place of operation: Materials: Theme: Operational objectives: at the end of the lesson, they will be able to: <ul style="list-style-type: none"> > Motor objectives: > Cognitive objectives: > Affective objectives: 						Educational establishment: Class: School year: The semester: Evaluation samples: Framework objectives: Reference objectives:					
LINK AND DURATION	CONTENT	DOSAGE	WORK FORMS AND METHODOLOGICAL INDICATIONS	METHODS OF EVALUATION	OBS.	WEEK/ PERIOD	THE LESSON NUMBER	REFERENCE OBJECTIVES, SPECIFIC SKILLS (CODIFIED)	LEARNING UNITS	LESSONS THEMES	OBS.

Fig. 1. Semestrial planning and lesson plan

- Microsoft Excel (Johnson, S., 2009) is an excellent program for writing statistics, balances, for the analysis of the students' performance in the PE class, it is possible to create a list of the students who are in the classroom, the student's individual record, and also the annual planning.

ANNUAL PLANNING																													
SCHOOL:																													
SCHOOL YEAR:																													
PROFESSOR																													
CLASS																													
Learning unit		Semester	Semester I												Semester II														
		Month	Sept						November			December			January			March			April			May			June		
		Week	I	II	I	IV	V	VII	VI	IX	X	XI	XII	XIV	XV	XVI	XVII	I	II	III	IV	V	VI	VIII	IX	X	XI	XII	XIII
Lesson																													
Forms of organization																													
Harmonious physical development																													
Motoring	qualities	Speed																											
		Ability																											
		Force																											
		Resistance																											

Fig.2. Annual planning

- Microsoft Powerpoint is used to make graphic presentations on the computer. The PE teacher can make presentations on various topics, based on the interest of the students: the presentation of (sport) games, of the rules in class etc.

Skill level and aiming

Assuming standard scoring, the optimal area to aim for on the dart board in order to maximize the player's score varies significantly based on the players skill.

The skilled player should aim for the centre of the T20 and as the player's skill reduces their aim moves slightly up and to the left of the T20. At $\sigma = 16.4$ mm the best place to aim jumps to the T19.



Darts

Darts is a form of throwing sport in which small missiles are thrown at a circular dartboard fixed to a wall.

Though various boards and rules have been used in the past, the term "darts" usually now refers to a standardised game involving a specific board design and set of rules.

Fig. 3. Using Microsoft PowerPoint to present new sports

Discussions and conclusions. We must accept the introduction of new technologies without restrains and fear of failure or useless waste of time. This is not true only for the traditional education system, but also for the other educational alternatives as this leads to an opening towards new means of organizing the lesson.

The use of these techniques creates a modern system that helps fast acquisition of physical exercises. It also favors the increase of the students' interest to understand the correct execution of movements: correcting the mistakes, facilitating intuition of the students, stimulating them.

With real advantages and disadvantages, the ICT means represent for the educational field indisputable resources for which the specialist are to identify the correct, useful, efficacious place in the process of formation of the knowledge, skills and attitudes at various formation levels.

The student is no longer viewed as passive receiver of information but it is a partner to be exploited to stimulate learning. Teaching material used must meet its training needs, on the level of information but also in the relation with the studying capacity.

The opportunities offered by information and communication technologies are to mediate the distance between teacher and student, allowing the installation of an appropriate learning environment, and a permanent feedback.

References

1. Johnson, S., (2009), Microsoft Office Excel 2007, Editura Niculescu, București; (traducere Oprescu, D.).
2. Johnson, S., (2008), Microsoft Office Word 2007, Editura Niculescu, București; (traducere Radulian, C., Panciu, F.).
3. Roibu, T., (1994), Tehnologia Audiovizuală în Educație Fizică și Sport, ANEFS, București.
4. Stănescu, M., Stoicescu M., & Ciolcă, C., (2011), Computer use in physical education and sports teaching, in The 7-th International Scientific Conference eLearning and Software for Education, April 28-29, Bucharest.
5. Vasile, L., (2009), Informatică, Editura Moroșan, București.

THE RELATION BETWEEN THE CLASS OF PHYSICAL EDUCATION AND THE SELECTION FOR FOOTBALL TRAINING WITH THE PURPOSE OF DEVELOPING THE GENERAL MOTRICITY FOR 7-8 YEAR OLD PUPILS

Rusu, O.H.; Rusu, R.G.

National University of Physical Education and Sports (NUPES)

Bucharest, Romania

Email: octavianhoratiurusu @rocketmail.com

Introduction

The class of physical education in schools has the following elementary characteristics:

- it is carried out –from the point of view of the content and general methodology – on the basis of an official, rhythmic and logical programme;
- it is led by a teacher with proper high education studies;
- it addresses to a compact group of students in terms of age and physical development.

Gheorghe Cârstea considers that there are 8 stages in a class of Physical Education and identifies them as follows:

- stage 1: organizing the group of students;
- stage 2: preparing the body for effort;
- stage 3: the selective influence of the locomotor apparatus;
- stage 4: the development of physical qualities: *speed* or *skill*;
- stage 5: the process of learning, consolidating, perfecting and constantly checking the skills and the physical development;
- stage 6: the development of physical qualities: *strength* and *endurance*;
- stage 7: the recovery of the body after the effort;
- stage 8: conclusions, assessments, recommendations for future activities.

Primary school children - who are part of the football school team - carry out the specific training after finishing the school program. This action, which is officially organized in schools, should have as a goal – on one hand – the initiation in the football game – and, on the other hand, the development of the general physical quality for primary school pupils.

Objectives

The present research aims to demonstrate that the students who are engaged in additional training activities develop higher indexes in terms of general motricity.

Assumption

The football training lesson contributes to the development of the students' general motricity.

Methods

Research protocol

The experiment lasted one year and had a number of 20 subjects, with ages between 7 and 8 years. For the beginning, we set up a test protocol with 7 physical exercise tests (the testing method, the training, the equipment and materials, the test planning, the test procedure and the record of the results).

The initial testing took place in September 2015 and the final testing took place in June 2016. The tests that were applied evaluated the general motricity of students and were as follows:

- 40 m sprint;
- 600 m endurance ride;
- extensions of the trunk from a laying facedown position;
- extensions of the trunk from a sitting position;
- lifting of the trunk from a laying face up position;
- length jumping from a routed point;
- squats.

The initial testing took place during the classes of Physical Education, between 15 – 30.09.2015. Before the initial testing, the tasks have been presented to the students with all the necessary explanations so that they were properly informed and knew exactly what they had to do.

As we applied the seven physical tests, we decided to apply two tests/ class of Physical Education, except for the resistance test, which was left for the last hour of the evaluation. The evaluation of the tasks was carried out according to the 3rd stage of the lesson.

The final testing took place between the 1st and the 15th of June 2016, following the same procedure as the initial testing.

The necessary equipment and materials that were used for the evaluation:

- stopwatch;
- measuring tape;
- whistle;
- adhesive tape;
- token;
- mattresses.

The Subjects

There were 20 students involved in the experiment, with ages between 7 and 8. They were all from Theoretical High school Teiuş.

The students were divided in two groups – the experimental group and the control group – each containing 10 students. The selection for the two groups, the experimental group and the control group, was performed after the initial testing of the 20 subjects. The students were divided according to the marks obtained at the initial testing, with no significant differences that could have influenced the final testing.

Methods and Resources

The experiment was developed during a school year, the number of Physical Education classes and their content being identical for the subjects in both groups. The subjects of the experiment group took part to an additional football training program during the whole school year. The training program was guided by a Physical Ed. teacher. The training classes were held weekly and lasted 50-60 minutes. Besides the training, the subjects also attended the competitions organized by the ONSS program

The recommendations for the training factors specific for the age of the students have been respected:

- 50% physical training (running and jumping)
- 50% technical training

Statistical Data Analysis

The statistical interpretation of the data was performed with the help of the following tests:

The Results:

Evaluated aptitudes	Task	Physical ed. class 7 years	Physical ed. class+ training 7 years	Physical ed. class 8 years	Physical ed. class+ training 8 years
Speed	Speed 40m	8.42 sec	8.45 sec	7.93 sec	7.91 sec
Endurance	Endurance running 600 m	3.19 min	3,22 min	3.00 min	2.51 min
Back strength	Trunk extensions from laying face down position	6	7	9	13
	Trunk extensions from sitting position	6	7	8	11
Abdomen strength	Trunk lifting from laying back down position	9	8	15	19
	Leg lifting from laying back down position	7	7	14	19
Inferior members strength	Long jump	1.10 m	1.07 m	1.23	1.33 m
	Squats	12	12	20	25

Discussions

When analyzing the results of the two research groups at the initial testing, we notice that there are no significant differences in the average marks, the groups being relatively similar from this point of view.

In contrast, when analyzing the results of the 20 subjects at the final test, we noticed a significant difference between the average marks of the 6 tests, in favour of the students in the experimental group who – besides the compulsory physical education class – performed an additional weekly training session. The only test at which the differences in the final testing were not very significant was the speed test, where we notice a lower improvement (but still an improvement) for the subjects of the experimental group.

Conclusions and proposals

Our conclusion is that an additional football training session led by a physical education teacher contributes to the development of the general motricity of the students. Engaging all primary school pupils in a supplementary exercise activity has a beneficial effect on the development of the students' general motricity. Using as a point of reference the positive results that we achieved, we suggest and encourage the involvement of all gymnasium students in practicing a sport after finishing the courses.

References

Cârstea, Gh. – Teoria și metodică educației fizice, București, 2000, pag. 133-134.

PHYSICAL TRAINING IN DOWN SYNDROM JUDO ATHLETES

Ionescu Gheorghe Drăguț

National University of Physical Education and Sports (NUPES)

Bucharest, Romania

e-mail: dragut_ionescu@yahoo.com

Abstract. Down Syndrome young people enjoy sports activities in the same way as their peers with a normal development. Our research is focused on the benefits offered by the physical training in judo. Down Syndrome judokas show better coordinated actions, motor skills and better tonus.

Down Syndrome judokas enrich their social skills while training for judo's competitions, so their benefits are both social and psychological. The Athletes improve their communication skills, their ability in acting by the rules and regulations applied in judo, a better emotional management in training and competitions and hopefully in their everyday life challenges.

All the benefits reached by the Judo physical training that we try to emphasize, we expect to become a part of Down Syndrome athletes as an important and essential gain for a long life span.

Keywords: Down Syndrome, judo, emotion, physical training,

Down syndrome is a chromosomal genetic disease that affects about one in a thousand children. First who described the syndrome, was British physician John Langdon Down. In 1959, French geneticist and pediatrician discovered that Down syndrome was caused by the presence of an extra chromosome 21, resulting in a total of 47 chromosomes, compared to 46 as a normally man has. This syndrome is also known as trisomy 21 or mongolism. People with Down syndrome have distinct physical characteristics. In spite of the fact that Down syndrome is permanent, most of those affected, enjoying a proper care, can lead a normal and active life.

Although Down syndrome is a challenge, most people with this condition can have a normal, happy and active life. Most of the challenges are related to cognitive dysfunction (mental retard) and health issues. People with Down syndrome are more liable to certain diseases and conditions than normal peers. The child can be helped to overcome these and other difficulties in a specific climate of love and safety. The children must provide regularly care by a team of healthcare professionals. Also, a suitable climate that encourages the exercise and interaction with other children can be really helpful.

Health problems and developmental disorders may contribute to the appearance of behavioral problems. For example, a child may develop oppositional defiant disorder as the result of the communication problems or other performance requirements. The patience of parents, the educational and social opportunities and the proper physical activity may be helpful in preventing or solving behavioral issues.

Most children with Down syndrome attend a normal school. They might need a adapted educational program, and sometimes even a special school. All children around the world that have a disability, in this case Down syndrome are legally entitled to education. These laws are made to protect their integrity.

More than half of people with Down syndrome live over 50 years. About 13% of people with Down syndrome have a life expectancy of over 68 years. In addition, improved treatments,

physiques exercises well organized have helped people with Down syndrome live longer and better. However, is known the fact that a child with Down syndrome has a lower life expectancy than average. Different diseases and related health problems when they are severe can cause premature death. For example cardiac malformations sometimes lead to heart failure or other serious problems that shorts lifespan.

The main problem in a Down syndrome athlete or more specific, in a Down syndrome judoka is known as Atlanto-axial instability, which is a misalignment of cervical vertebrae C1 and C2 in the neck more than 5mm. This condition exposes individuals with Down syndrome to the possibility of injury in different maneuvers that they use in judo. An athlete with Down syndrome, who has been diagnosed with Atlanto-axial instability condition, cannot attend a trial in judo.

The regulation applied in judo competitions for Down syndrome athletes has some changes from the normal one, in particular to favour the adaptation and protection of athletes. For example all athletes participating in a judo event will be assigned to different divisions on the basis of the information requested in the registrations form: sex, age, weight category, level of skill and class. After that, each athlete will be assigned, alongside other athletes with similar skills in accordance with the FIJ criteria as well as with safety rules. The skill and competence assessment will be based on the following criteria: judo, notion of contest, anticipation of opponent's movements, anticipation of danger, cause-effect sense, technique, athlete performance, speed of technique, athlete's reaction and notion of strategy. Following this analysis, there are 5 levels of competence, based on the comparison between each athlete and a regular athlete participating in non-competitive, recreational or educational activities.

Level 1 of competence. A level 1 judoka has a perfect judo feeling, has fast and powerful moves, is responding promptly and he can develop a strategy during the match.

Level 2 of competence. A level 2 judoka has a good judo feeling, slower and not very strong moves, is reacting quiet promptly and largely understand the notion of strategy.

Level 3 of competence. A level 3 judoka has a good judo feeling, his moves are largely fast and powerful, without having the notion of strategy.

Level 4 of competence. A level 4 judoka has a very little judo feeling, his moves and reactions aren't fast and powerful, without having the notion of strategy.

Level 5 of competence. A level 5 judoka doesn't have any judo feeling, he is very passive and he always needs the assistance of the coach or referee, to take part in the match.

The rules of judo competition (Here we will focus more on the special regulation brought for Down syndrome). The regulation allows the referee to stop the match if he considers the safety of one or both Down syndrome athletes is in danger. The actual contest time is 3 minutes, and if it is necessary, will be used the "Golden Score" for 1 minute.

If an athlete needs help to enter on the mattress area of the competition, the coach is allowed to assist him or her with a secondary referee. People have no access on the mattress area without the permission of the referee.

If an athlete has to start from "ne-waza" position (starting on his knees or sitting) because of his disability, the other athlete has to change his normal starting position, from his legs, to the "ne-waza" position.

A competition starting in "ne-waza" position, must continue in "ne-waza" position.

If both athletes compete in "ne-waza" position, they are forbidden to push the opponent backwards.

In both “tachi-waza” position (starting from his legs) and “ne-waza” position, the referee ensures that the athlete is not caught in a position that implies any kind of risk (Atlanto-axial instability).

Forbidden techniques:

- a) apparently techniques of sacrifice backwards;
- b) arm dislocation techniques;
- c) strangulation techniques;
- d) triangular strangulation techniques;
- e) falling over your opponent after performing a good technique;
- f) any technique that jeopardizes the opponent’s neck is forbidden.

Sports activities bring an important benefit for Down Judokas at a social level. Sports activities constitute a basis for social integration for children and young people. The social benefits are only a part of all the advantages offered by sports. Meeting new people, making new friends, interacting with different persons from different parts of the country or of the world, bring for Down Judokas an unique life experience, and help them develop their communication and social skills, their way of interacting with different personalities. Training and practicing judo bring the Down Judokas together in sports competitions where they interact, bound and become good friends.

In the same way, all Down Judokas share the same life challenges brought by the Down syndrome, so they have their common life difficulties wherever they live. In this way, sports help them to bring a normal perspective on their daily basis.

For each person with Down syndrome, living in a community close or apart from their family could be challenging, for their everyday life, for their professional activities, for their social integration. In this way, judo helps them overcome their limits brought by the society.

Judo training helps in sharing a common passion for sports, sharing the same kind of emotion before or after the sports competitions, sharing the same perspective on winning and losing.

At the end of each competition, the Judokas that compete, are both friends and winners. It is not important who wins or who loses, because competing, being a part of the game it is the most important. Being a part of the game is a process of becoming a true Judoka, and this process is represented by the training. Each competition brings new emotions and a particular state of mind. Even if Down Judokas compete with friends, it is hard for them to fail, to lose. There’s state of mind it is related with *hic et nunc* moment, where they feel like everything stops right in that particular moment. They cannot project a future win or even a future better performance of their own; this makes them feel sometimes hopeless. In these key moments, they need guidance and support from their coach, family, friends, or even opponents. The emotional bound between Sensei and Judoka has a protective role. Sensei is a role model for his trainee and the sports specific tasks become less important than the emotional support that Sensei offers.

Judokas training has significant benefits at a social and emotional level. It is important for each individual, especially a Down Syndrome Judoka, to have a good management of their emotions, to have a deal with his anxiety before and during the competition, or in different moments of his everyday life. Judos training offer an educational gain in this emotional management.

It is noticed that during the training or competition, Down syndrome Judokas experience different emotional states of mind among which high anxiety and high insecurity, fear, fear of failure, or even blockage. Sensei needs to distinguish between their important need for protection, or their real emotional challenge, represented by the Down syndrome. Judokas experience difficult moments, when they are well aware and try to get an emotional protection from Sensei and negotiate at an emotional level their training tasks. There are also moments, when the Judokas reach their real limits. In those moments, the trainer offers protection and understanding, support for the athletes. Sensei needs to have a good understanding and to distinguish between the need for protection and the real limits.

Judo is a sport and more than that is a way of life, that teaches you to respect yourself, your opponent, and all that surrounds you.

Judokas lead themselves in the training process by some old principles that shape their mind and actions. Judoka's rules lead to an ethical development of the athletes.

1. Judokas have to take control over their own minds, thoughts and their target is to have a positive thinking and in this way to bring their contribution to the hard work of their team mates. Another important matter is the way they can control their emotions.

2. The way they communicate it is important. Each word has a certain value and the words are meant to build something not to destroy or hurt. All the words should reflect the truth. It is important to do things in a certain order: first to listen, then to analyze and at the end to respond.

3. A real Judoka needs to control his actions. He needs to fight for the truth, beauty and good. His actions don't have to harm the other one.

4. Have fun, laughing it is important as an athlete for himself but also for the state of mind of his teammates.

5. Each Judoka needs to follow the advice of his coach or other better trained Judokas. Formal events are attended accordingly. My personal opinion is important to be communicated openly.

6. During the training, Judoka needs to focus only on Judo; all his actions, thoughts, feelings should be related to judo, in this way he will improve himself. In the same time each sportsman needs to let it show the beauty of this sport.

7. A competition is always challenging but for Judokas is important to fight fair and daring. In each sports competition is important to respect your opponent but in the same time Judokas fight for their team or country. The Judoka that wins will be humble and the Judoka that loses will work much harder.

8. Feeling pain is not easy, and in these moments the athletes needs a good self-control so that their reactions to pain do not interfere with the state of mind of their teammates, opponents or other sportsmen. It is important to be understood that the pain is not caused purposely but accidental by another individual.

9. The sportsman plays fair and square and is not looking to emphasize himself. He is not using his knowledge and physical strength to fight but to defend against danger or to protect the truth and fair.

10. A Judoka is a strong person, brave that fights in difficult moments, does not give up and keeps on going on in trainings or everyday life.

Judo is an important educational gain, an important way of life that shapes beautifully the mind, the soul and the body of each individual.

Bibliography:

Regulile turneului de judo pentru persoane cu dizabilitati – septembrie 2016

Regulamentul sportiv al jocurilor de vara Special Olympics

Mircea Croitoru, Principiile luptatorului de judo. Codul etic si moral, ED Vladimed – Rovimed, 2014

METHODICAL REQUIREMENTS TO ENSURE SAFETY IN LESSONS IN PHYSICAL EDUCATION AND SPORT

*Boncheva, M.D. Vladova, I.
National Sports Academy – Sofia, Bulgaria
e-mail: mircheto.1992@abv.bg*

Introduction

The main objective of the educational process in physical education and sport is the effective implementation of educational, rehabilitative and preventive health-related tasks leading to harmonious development of students. This idea of harmony between the physical and spiritual qualities of the younger generation has its origins in antiquity. It develops over the centuries and retains its power today. School physical and sport education is a means to contribute to the practical realization of this idea, but only when conducted under conditions and through approaches that ensure the security of students. Security in the teaching process in physical education and sport lessons "*contains a set of purposeful, premeditated organized activities that provide the execution of any motor action in educational process or leisure time, without admission of temporary or permanent damage to the body of the student*" (Marinov, Athanasiou, 2009).

According to them, the most important thing is to preserve the life and health of students in active motor activity. This is necessary because, according to Adams (1983), most cases of accidents and injuries in school systems are registered in lessons in physical education and sport. For this reason, ensuring security is of great importance.

The Law on pre-school and school education in Section II Rights and duties of teachers notes that one of their duties is to "*protect the life and health of children and students in the educational process.*" Due to specific activities in physical education and sports lessons, the teachers are obliged not to harm students neither physically nor mentally.

Priority of each teacher must be to ensure safety lessons. Their good organizational and management skills are essential either for providing high quality of education or ensuring safety lessons (Capel, 1997). From an organizational perspective, it is important for the teachers to request and observe all students to be dressed in an appropriate sportswear and appropriate athletic shoes, not to wear during lessons jewelry that can harm both themselves and others in case a collision.

Potential dangers for accidents are organizational disorder in the conduct of the lesson as well as conducting lessons in the absence of the teacher. Ensuring safety lessons is in direct connection with a number of methodological requirements. Set of rules and recommendations applicable in all lessons is essential. Each teacher should create such rules.

From an organizational and methodological point of view it is very important that students enter the gyms in order and strive not to be late for lessons. Teachers should strictly observe the teaching methodology of physical exercise; they should comply with individual and age-sex characteristics of trainees, with their current health level and physical and their technical preparation.

To ensure a safe learning process of great importance from a methodological point of view is the proper planning of lessons:

- Setting tasks in lessons that comply with the state of material and technical base;
- Strictly observing of didactic principles (eg. gradual increasing of the difficulty; it should be accessible to students; consistency and systematic teaching of various physical exercises, taking into account the individual characteristics of students -

sports teacher should know the strengths and weaknesses of students, disability or illness and allergies that may affect the learning process and cause possible injury or accident) (Davidov al. 2003). After illness to require permission from a doctor.

- Good planning of the educational process;
- Adherence to the methodology of teaching different physical exercises; to require proper technique, because the wrong technique of execution often is a serious risk of injury; •
- Not ignoring the proper warming at the beginning of the lesson and gradually proceeding to the main part of the lesson;
- Not applying methods and tools that are commonly applied in the training process with regular exercise students;
- Providing adequate support in performing more complex exercises. It is done by the teacher or students. The support is to implement physical efforts by the teacher or the students in order to achieve "correct and successful completion of part or whole studied exercise". Attending and support should end when students can do the exercise by themselves with self-confidence (Davidov et al., 2003). All students are taught how to carry out assistance, how to protect themselves and how to emerge successfully from dangerous and risky situations, such as implementation of additional movements (contraction of the hands, feet, body, etc.). It is important to train a proper landing during a fall to minimize the risk of injury and trauma. It is studied usually at the beginning of the process of learning a new physical exercise in order to overcome fear and to achieve better control and understanding of the movement. Attending and support are performed till a proper technique of performance is achieved and till students feel secure in implementation. From a methodological point of view when performing support and attending, it is important that those who carry it out, stand so that it does not create additional risk of injury either for themselves or for the student who needs it. It is also important not to impede the execution of the exercise;
- In signs of fatigue it is essential to reduce the difficulty or to increase time between motor tasks;
- Increase the time provided for warming the students during outdoor lessons in not very good weather conditions (wind, lower temperatures, higher humidity), (Davidov, et al., 2003);
- Proper selection of exercises in compliance with anatomy-physiological characteristics and abilities of the students. Students must be properly trained and instructed for using the equipment and facilities. The dangers should not be underestimated and safety measures should not be ignored. It is important that students be continually monitored by teachers. From a methodological point of view it is important that the sports teacher should observe the rules of sports and active games in order to prevent possible clashes and strikes during the game. They are characterized by a variety of motor actions: running, stops, jumping, turning, etc. In fall and injury first aid should be given. (Prokopchuk, Knyazev, 2013). In a heated and emotional game situation, the probability

of collisions is greater. The teacher should react on time to prevent them. Educational activity should be a high level and in cases of acts of rudeness among students the teacher should react to cease them. Clashes can also be unintentional. They can be both among students and between student with a hard object - unprotected radiator or wrongly located appliance or tool. Therefore, it is important to take into account the nature of the size and condition of the playing field. Devices that are not currently in use should be properly positioned so that they pose no threat.

It is important that the teachers have the skills to control motor activity because the causes of trauma and injuries are not due only to chance and inattention. In most cases they are specific and an assembly of several reasons (Ignatov, 2013).

Methods

The subject of this study are methodological requirements related to safety when conducting educational activities. The aim is to investigate the subjective opinion and evaluation of teachers for pedagogical activities related to reducing the risk of injuries to students during lessons in physical education and sport.

The object of the study were 63 teachers in physical education and sport - 34 (54%) were female and 29 (46%) were men. The average age of the respondents was 46 years (Min = 23, Max = 66, SD = 11,49), and for women is 49.5 years (Min = 27, Max = 66, SD = 9,56), and in men 42.5 years (Min = 23, Max = 62, SD = 12,47). The surveyed teachers have teaching experience between 1 and 38 years, the average duration is 18.5 years. Schools where the study was held were situated in two large and two smaller cities in Bulgaria: Sofia - 17 teachers (27%) working in state, municipal and private schools, in Plovdiv - 32 teachers (50.8 %) teaching in public schools and 14 teachers (22.2%) from the towns of Razlog and Karlovo working in municipal schools. The surveyed teachers have sports-pedagogical education, more than half of them (79.4%) have completed a degree "Master" and the remaining 20.6% have completed a degree "Bachelor".

To realize the objective of the study complex methodology is given: an analysis of literary sources, methods for collecting empirical data by separate methods. To investigate the preventive value of some of the most important requirements an expert evaluation was made by the teachers. They were provided 14 separate requirements for safety and they were asked to assess how big is the risk of occurrence of adverse events, traumas and injuries by using 5-point Likert-type scale. With grade 1 meaning the lowest risk, with grade 5 - the highest level of risk.

The results were processed by a mathematical-statistical methods for quantitative processing and analysis of the results (frequency, variance and benchmarking), with the statistical program "SPSS 21 for Windows", according to well-established statistical procedure.

Results and Discussion

Subjective prerequisites for ensuring safety lessons in physical education and sport in general are related to the responsibilities and activities of teachers, their training and competence, the manner of organization, management and conducting educational activities. As subjective prerequisite for safety we will look specifically to the compliance of methodological requirements with pedagogical activity.

Teachers cited the following requirements, the violation of which has the highest risk of injury:

- Not allowing students to be unattended during the lesson, even for a short time;
- During the lesson students not to wear jewelry and other objects that could potentially hurt themselves or someone else;
- During the lesson students be wearing appropriate athletic shoes;
- Checking before walking tour with students (tourism is included in the curriculum of physical education and sport) the validity of contact data of rescue teams and departments; providing opportunities for first aid for minor injuries such as availability of portable first aid kit.

Associated with less risk, according to teachers. Are the following features:

- Students should be in the gym or on the playground and be ready for the start of the lesson;
- Students who are late for more than 10 minutes should not be engaged in lesson activities without having carried out a preliminary warming;
- Students should be wearing sports clothing during the lesson.

The results are shown in Table 1.

Table 1. Significance of methodological requirements for safe pedagogical activity

Methodological requirements	M	SD
Complying with the meteorological weather forecast a walking tour	4,10	1,41
During the lesson students should not to wear jewelry or other objects that may injure them or someone else	4,08	1,37
Before a walking tour there should be a thorough study of the route and obstacles that may be dangerous (peculiarities of the terrain, water sources etc.).	4,08	1,45
Not allowing students to be unattended during lesson for short or long periods.	4,21	1,52
Before a walking tour there should be a thorough check of the validity of contact data of rescue teams and departments.	4,16	1,41
Providing an opportunity for first aid for minor injuries, such as availability of portable first aid kit.	4,14	1,44
Students should be on time in the gym or on the playground and be ready for the start of the lesson.	3,24	1,59
Students should be wearing shoes suitable for sports during the lesson.	4,03	1,51
Students should be given proper instructions about safety rules related to exercise and motor tasks included in the content of the lesson.	3,97	1,42
Devoting enough time at the beginning of the lesson for proper warming before exercises.	3,85	1,52
Carefully adhering to the methodology for teaching different physical exercises and sports disciplines.	3,77	1,48
Monitoring the technique, applied by students and timely correcting the errors.	3,76	1,47
Students should always wear sports clothing during the lesson.	3,69	1,57
Students who are late more than 10 minutes should be not allowed to engage in lessons without being warmed up.	3,43	1,39

We compared the responses of teachers on several indicators:

The area of the school indicator found differences in 5 methodological requirements. The evaluation of teachers from Sofia in all these cases are higher than estimates of teachers in a large city like Plovdiv:

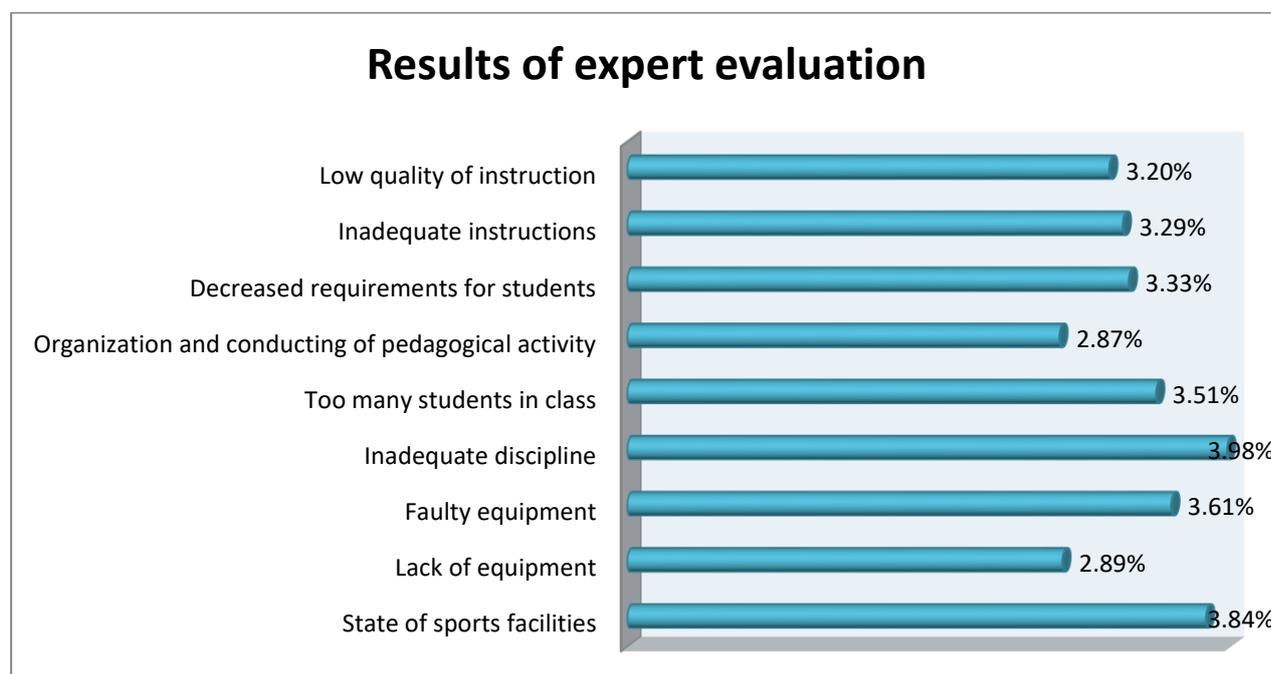
- Devoting enough time for quality warming students ($u = 2,14; \alpha = 0,05$);
- Not allowing late for class students to participate in lessons without warming ($u = 2,24; \alpha = 0,05$);
- Pupils to be on time in the gym or on the playground and be ready for the start of the lesson ($u = 2,60; \alpha = 0,01$);
- Thoroughly adherence to the methodology of the teaching exercise and sports disciplines ($u = 2,03; \alpha = 0,05$);
- Monitoring the technique, applied by students and timely correction of errors ($u = 2,46; \alpha = 0,01$).

Teachers from big cities compared to teachers from small ones, see more risk when students are allowed to wear jewelry or other objects, which could hurt them or others during the lesson ($u = 3,01; \alpha = 0,01$).

Teachers who graduated from the NSA "Vasil Levski" Sofia exhibit greater sensitivity with regard to the risk associated with the lack of sportswear ($u = 1,98; \alpha = 0,05$) and to the risk of not been acquainted with the forecast before walking tour ($u = 2,55; \alpha = 0,01$), compared to their colleagues graduated from Plovdiv University "Paisiy Hilendarski".

There were no significant differences in the answers depending on the pedagogical experience of teachers.

The way by which the educational activit is conducted is assessed by teachers as the the least important. Paramount importance is given to inadequate discipline of students and unsatisfactory condition and quality of facilities and sports equipment and gear (Fig. 1).



The only difference found regarding the assessment of the reasons between teachers is the sex indicator. Women assessed as more significant reason for the presence in schools of poor and unsupported sports equipment ($u = 2,325; \alpha = 0,05$) and poor organization and conducting educational activity ($u = 2,02; \alpha = 0,05$).

Conclusions

In conclusion we can say that surveyed teachers possess a good level of competence in matters of safety. According to them, the most serious risk for the occurrence of injuries for incidents during a lesson in physical education and sport, is leaving the students unattended by the sports educators, even for a short time.

References / Bibliography:

1. **Davidov, B, Kovalenko, T., P. Kiselev, D. Popova.** (2003), Volgograd, [Dessev, L.]
2. **Ignatov, D.** (2013). Reasons and factors giving rise to traumatic injuries in teaching physical education in elementary school. Stara Zagora, Retrieved from [http: // www. \(Journal.sustz.com/VolumeIII/Number8/Paper/DechkoIgnatov.pdf\)](http://www.Journal.sustz.com/VolumeIII/Number8/Paper/DechkoIgnatov.pdf)
3. **Marinov, B., M. Athanasiou.** (2009). Adjusting the exercise of students in the process of physical education. Sofia [Dessev, L.]
4. **Prokopchuk, S., Knyazev, C.** (2013). St. Petersburg [Dessev, L.]
5. Law on pre-school and school education, promulgated in SG. 79 of 13.10.2015, in force from 1.08.2016, the [Dessev, L.]
6. **Adams, N.** (1983). Law and the Teacher Today. London: Hutchinson
7. **Capel, S.** (1997). Learning to Teach Physical Education in the Secondary School: A Companion to School Experience. London

THE DEVELOPMENT OF MOTOR QUALITIES OF SECONDARY SCHOOL STUDENTS IN PHYSICAL EDUCATION LESSONS WITH FOOTBALL THEMES

*Cebotaru Veronica,
S.U.P.E.S,*

Chisinau, Moldova

e-mail: cebotaru.veronica@mail.ru

Coordinator: Carp Ion, PhD in Pedagogy, university professor,

Abstract: In the present article is theoretically and scientifically tackled the problem of motor skills development of the secondary school students in physical education lessons. In this context, we have selected the game of football as a possible means for developing motor skills. Through the proposed methodology we could select and apply didactic contents with football elements in educational process and experimentally to argue their influence through specific results on indices for developing motor skills to secondary school students.

Keywords: educational process, motor qualities, didactic contents, football game, physical education lessons with football themes, secondary school students.

Introduction. The process of education of the motor skills in secondary school is carefully considered by most experts due to the fact that they provide the physical activity efficiency and highly operate the physiological potential of the student at this age. The school physical education is required to ensure a broad base in their education, which is a prerequisite for achieving some further performances in sports activity - where there are required only specific manifestations and combinations - thus avoiding the restricting through early specialization due to multilateral development of skills [1,3,4,5].

In this context, we selected the game of football as a possible means to develop motor skills. Through sports games can be improved any quality, can also be improved functions of various analyzers, on which depends the correct and precise performance of movements. That is why a great variety of games require the manifestation of speed, precision of actions, movements coordination, etc., creates a favourable basis for the development of motor skills.

However the authors [2, 6, 7] underline the role of sports games in physical education class, they generally do not pay the due attention to games planning according to motor abilities.

The insufficient approach of the football game problem as a means of school physical education in developing students' motor skills, but also the lack of some theoretical and methodological elaborations regarding its practice at secondary age, have become the main updating factor of this research.

Problem of research is the insufficient use of different forms of practice in the education process of motor skills that would allow a visible improvement of physical training indicators, while the used means, mostly lead in most of cases to unsatisfactory results in this regard.

The research purpose is to streamline / improve the process of developing motor skills of secondary school students during physical education lessons in football themes.

Methodology of research. To achieve the goals and objectives established during the research were used several research methods: bibliographical documentation method - analysis and generalization professional literature data on the subject and related subjects; Method of sociological survey; observation method; testing method; pedagogical experiment method; mathematical and statistical methods of processing and interpretation of data; graphic and tabular method.

Organization and research development. In accordance with the formulated purpose and objectives, the basic researches were carried out during the pedagogical practices conducted in TL "Alexandru cel Bun" from Singera, Chisinau during of school year 2016-2017.

In the first stage –of research, it was conducted a generalization of factual material, curricula, teaching systems of discipline "Physical education" of evaluation systems of psychomotor skills of secondary school students.

The pedagogical methodology and specialty literature review, on the topic studied by us allowed us to establish and argue the basic aspects of educational activity content, development and evaluation of psychomotor skills of secondary school students. At the end of this stage certain practical tests were developed.

The measures results had been registered on each student's individual file in the evaluation column and show the data of the initial test of pedagogical experiment. The samples which determine the students' motor potential correspond to the curriculum requirements: leaning forward, standing long jumping, sprint running 30m (3x10m), tractions on fixed bar (boys), push-ups (girls) and torso raising of lying dorsal (sec.). All obtained data in the initial testing, both of the girls and of the boys were presented in the Tables 1 and 2.

The researches results. The used tests of pedagogical experiment present a great importance and through them the students' abilities are evaluated in conformity with the frame objectives provided by new curricula. Also, the tests had been adapted depending by the age and gender students' particularities and technical and material conditions from school.

In the experimental and formative second stage – (from September 2016 till March 2017) the main aim was to adapt and improve manifestation indices of motor qualities in the training process by means of initial tests (the first stage).

In order to see the effects of the didactic process during the formative experiment, there were selected and applied at the lessons of physical education teaching contents with football elements aimed to developing the motor skills .

The relevance between the volume of the main means of action on the process of development of psychomotor skills according to yearly graphical plan of teaching the physical education subject at the secondary school level is:

- a) Training of specific means from athletics – 25%;
- b) Training of specific means from gymnastics – 20%;
- c) Training of specific means of sports games – 15%;
- d) Training of specific means of football game – 40%.

As a result of the application of the mentioned means system at the research final stage, we purposed to analyze the indices registered after pedagogical experiment realization during the school year.

In the final stage (from March till April 2017) were systematized and processed data obtained during the pedagogical experiment and verified the effectiveness of curriculum and of means specific to football game during physical education lesson. The obtained results were processed according to mathematical and statistical methods and interpreted by respective analytical comparison aiming the qualitative levels obtained by the students of the experimental groups at the final stage of research, after which it was carried out the comparison of initial testing results with those of the final testing (Tables 1 and 2).

Table 1. Motor indices of secondary school girls included in pedagogical experiment (n=29, IXth form)

Nr. of crt.	Control samples	Group	Initial testing	Final testing	t	P
			$\bar{X} \pm Em$	$\bar{X} \pm Em$		
1	Sprint running 3x10m (sec)	E	8,47±0,13	8,23±0,12	1,85	>0,05
		M	8,55±0,15	8,45±0,15	1,37	>0,05

	t; P	E-M	1,76; >0,05	1,92; >0,05		
2	Push-ups, <i>nr.</i>	E	18,99±0,57	19,22±0,33	2,69	<0,01
		M	18,21±0,49	18,97±0,41	2,13	<0,05
	t; P	E-M	1,04; >0,05	2,14; <0,05		
3	Leaning forward, <i>cm</i>	E	13,89±0,31	15,67±0,26	1,90	>0,05
		M	11,13±0,32	13,59±0,29	1,94	>0,05
	t; P	E-M	1,70; >0,05	1,90; >0,05		
4	Torso raising of lying dorsal, <i>nr.</i>	E	26,40±0,96	27,67±0,78	3,50	<0,01
		M	24,34±0,99	25,08±0,85	2,07	<0,05
	t; P	E-M	1,47; >0,05	2,04; <0,05		
5	Standing long jumping, <i>cm</i>	E	183,70±2,80	196,56±2,16	3,40	<0,01
		M	175,00±3,08	178,44±2,92	1,95	>0,05
	t; P	E-M	1,27; >0,05	2,08; <0,05		

The statistical analysis of the results demonstrated by the sample of subjects included in the research at the test of speed (running 3x10 m), according to the data in Tables 1 and 2, both boys and girls, highlights a small increase of final results to the initial ones, statistically in a great measure having an insignificant character ($P > 0.05$) both in control groups, as well as in experiment ones in all stages of research. In general the quality of speed is quite conservative and essentially cannot be improved in a relatively short period, as in this case, when the duration of teaching experiment for school year period.

Table 2. Motor indices of secondary school boys included in pedagogical experiment ($n=24$, IXth form)

<i>Nr of crt.</i>	<i>Tested indices</i>	<i>Group</i>	<i>Initial testing</i>	<i>Final testing</i>	<i>t</i>	<i>P</i>
			$\bar{X} \pm Em$	$\bar{X} \pm Em$		
1	Sprint running 3x10m (sec)	E	7,26±0,12	7,17±0,12	1,14	>0,05
		M	7,28±0,13	7,92±0,10	1,95	>0,05
	t; P	E-M	0,11; >0,05	0,51; >0,05		
2	Tractions, <i>nr.</i>	E	9,01±0,51	10,23±0,37	3,35	<0,01
		M	8,16±0,52	8,38±0,49	2,09	<0,05
	t; P	E-M	1,16; >0,05	2,03; <0,01		
3	Leaning forward, <i>cm</i>	E	6,31±0,49	15,56±0,41	2,10	<0,05
		M	5,63±0,48	14,44±0,37	3,46	<0,01
	t; P	E-M	0,99; >0,05	2,03; <0,05		
4	Torso raising of lying dorsal, <i>nr.</i>	E	34,17±1,27	35,34±1,15	3,36	<0,01
		M	31,86±1,28	33,85 ±1,23	2,04	<0,05
	t; P	E-M	1,28; >0,05	2,07; <0,05		
5	Standing long jumping, <i>cm</i>	E	205,00±2,46	221,27±2,15	2,06	<0,05
		M	198,09±2,33	210,47±1,86	3,34	<0,01
	t; P	E-M	1,16; >0,05	2,04; <0,05		

Approximately the same tendency for results analysis of the boys test force (traction) with a statistically significant difference ($P < 0,01$) in the final stage of the research and an important progress with ($P > 0,05$) of the girls (push-ups) has been registered.

The general and local mobility of students of all levels of education, including the secondary school one is another motor quality indicated in the organization documents of school physical education.

Analysing the evolution of this quality during the pedagogical experiment can be noticed a tendency of increasing the results at the end of it, both of the boys and of the girls. Finally, the increase difference of results at the end of the pedagogical experiment was more pronounced of boys in both groups - control and experiment. This is explained due to the fact, that for boys, the mobility indicators at the beginning of the experiment were very low, they managed to improve the mobility at the end of pedagogical experiment on average by 1-1,5 cm.

Thus, at the initial stage of the experiment the mobility indices were $16,31 \pm 0,49$ cm in the experimental group of boys and $15,56 \pm 0,41$ cm at the end, in the control group. Mathematical calculations statistically have shown a significant decrease in the control group with $P < 0,05$ and in the experimental group with $P < 0,01$.

Almost the same results were registered in both groups of girls, which the mobility differences were statistically significant with $P < 0,05$ in the control group and $P < 0,01$ in the experimental group.

Following the results of the test force of back at the groups of boys included in the pedagogical experiment, we see approximately the same progress. In both cases, the difference between the initial and final indicators statistically proved to be significant: $P < 0,01$ in the experimental groups and $P < 0,05$ in the control groups.

We will mention that this motor capacity had a positive dynamic both of the boys groups and of the girls groups at the end of the pedagogical experiment comparatively with indices initially registered. Thus, the difference was statistically significant for the students from the experimental group (girls) in both cases: $P < 0,01$ in the experimental group and $P < 0,05$ in the control group.

There is an improving tendency of results both of the boys and of the girls concerning the strength of legs. In the case of boys from the experimental group, at the beginning of the pedagogical experiment, the standing long jump result was on the average $210,00 \pm 2,46$ cm, as at the end of this to improve until $221,2 \pm 2,15$ cm. For the boys from the control group, the results were between $203,09 \pm 2,33$ and $210,47 \pm 1,86$ cm, which demonstrated a statistical significant increasing during the pedagogical experiment with $P < 0,01$ in the control group and, respectively, $P < 0,05$ in the experimental group.

The respective indicators developed a less pronounced evolution at the girls. Thus, at the beginning of the pedagogical experiment, in the experimental group the girls jumped on the average $183,70 \pm 2,80$ cm, and at the end of it the results increased till $196,56 \pm 2,16$ cm.

The same tendency of increasing results was at the girls of the control group at the beginning of the pedagogical experiment being $185,00 \pm 3,08$ cm and at the end $188,44 \pm 2,92$ cm. In both cases the mathematical calculation showed a statistical significant increasing with $P < 0,01$ in the experimental group and $P < 0,05$ in the control group.

Based on the results of the pedagogical experiment, those related by the motortraining of students from secondary school, we can mention that the final testing of students provides that overview which has real results, that make possible the results comparison of initial testing of students with those of final test to observe the dynamics of motor indices during a school year. The obtained results can be compared with the standards of national evaluation system, but also with "Motor potential of students from secondary school 2006", emphasizing the direction of development of motor potential of students.

According to statistically processed data, we observe that the arithmetical average of each group of the experiment is higher than the average of control group in each sample, however, the teams show a lack of homogeneity.

References:

1. Atanasiuc C. Unele aspect privind dezvoltarea calităților motrice la copii și juniori. În: Discobolul, nr.4, București: E.F.S., 1988, p.7-9.
2. Balint G. Metodica predării fotbalului în gimnaziu. Editura P.I.M., Iași ,2007, 300 p.
3. Carp I. Proiectarea și operaționalizarea obiectivelor curricular în procesul dezvoltării calităților motrice ale elevilor claselor gimnaziale. În Știința culturii fizice. Chișinău: USEFS, 2016. Nr.25/1, p. 56-59.
4. Cîrstea G. Teoria și metodică educației fizice și sportului”, București: ANDA, 2000, p.67-79, 90-132
5. Demeter A. Bazele fiziologice și biochimice ale formării deprinderilor motrice”, București: Sport-Turism, 1982. 136 p.
6. Rață G., Rață B. C. Aptitudinile în activitatea motrică. Bacău: EduSoft, 2006, 318 p.
7. Sîrghi S., Ciobanu M., Metode și mijloace de pregătire fizică a tinerilor fotbaliști. În: Teoria și arta educației fizice în școală, Chișinău, nr.3, 2009, p. 33-36.

STUDY REGARDING THE LATERAL SPEED, AGILITY, AND BODY CONTROL IN BACAU COUNTY SIXTH GRADERS

Caleap Carina Oxana, Ailutoaei Tudor-Costin
"Vasile Alecsandri" University of Bacau,
e-mail: catalinaa_compte@yahoo.fr
Coordinator : Professor Cătălina Ababei, PhD.

Abstract. The lateral speed, agility, and body control are themes found in both the physical education lesson and top athletic performance, where in many sports the development level of these aspects play a major role in reaching the desired goal. Agility, defined in the Romanian Language Dictionary as *movement ease, suppleness* enjoys today a special attention from the experts in the field, its development methods and means being increasingly diversified. Considering these ideas, the research started from the following working hypothesis: *the application of the Three-Cone Drill test to the Bacau sixth graders could indicate the development level of the three aspects, which could lead to a possible assessment of the effectiveness of the methods and means used for this purpose.* The Three-Cone Drill test belongs to the authors M.P. Reiman, R.C. Manske who have described it in their book, "Functional testing in Human Performance" (the chapter "Speed, Agility and Quickness Testing"), Human Kinetics, 2009. This study used the following research methods: the documentation method, the observation method, the testing method, the statistical-mathematical method for analyzing and interpreting the data, and the graphical representation method. The study has confirmed partially the starting hypothesis.

Key words : movement, cones, speed

1. Introduction

Speed, in general, is considered to be a basic motor skill, used in all sports, being the focus of many authors.

Speed is essential in getting good results in most track and field events, and not only. Great attention is paid to the development and education of this skill around the age of 12-14, because this is considered to be the optimal age for achieving the best progress, from a qualitative standpoint. Speed is **defined** as: "the ability to perform a movement or a set of movements in the shortest amount of time";

According to Dragnea A., "the quickness or fastness of the movement or motor act in a time unit";

Agility/Suppleness is **defined** as an ability of the articular system that conditions the effectiveness of various motor actions, usually being associated with a good motor performance. In the professional literature, the term has several synonyms: suppleness, flexibility, joint mobility, muscle/ligament extensibility (Dragnea, Bota, 1999).

Harre and Frey see mobility as being "a person's ability to perform motions with a large range, through that person's own strength, or under the influence of exterior forces."

Puberty starts in girls at the age of 11-12, and in boys at the age of 12-13, and it lasts until the age of 13-14, and 14-15, respectively, being considered the second phase of morphological maturation. Puberty brings psycho-physiological transformations with deep repercussions for the body. These are caused by the hypothalamic secretions that go to the anterior hypophysis and stimulate the secretion of GH, and of the gonadotropic hormones FSH and LH, acting upon the sex glands. Up to puberty, there are no differences in regards to the hormonal secretions. In the first stage of puberty, there is a growth spurt that modifies the height and weight faster and

more obvious in girls than in boys. Thus, at the age of 10-13, the girls are taller and weightier than the boys of the same age, while later the boys take the definitive lead in height and weight.

The physiological particularities of this age delineates this period as one of the most favorable for the development of motor skills. The most important ones remain the speed (movement speed) and the dexterity, which can develop without special restrictions, the distances covered at maximum speed being, however, smaller than what an adult could cover.

2. Research objectives, methods, hypothesis.

The main objective of this research was to test the sixth graders using the *Three-Cone Drill*, and to compare the results recorded by the groups in which the testing was performed.

Considering the 3 skills that were researched, lateral speed, agility, body control, this study started from the following ***hypothesis***: *the application of the **Three-Cone Drill test** to the Bacau sixth graders could indicate the development level of the three aspects, which could lead to a possible assessment of the effectiveness of the methods and means used for this purpose.*

This study used the following research methods:

- A. The documentation method. This method provided the information needed for this research, such as: the actual test, information about the 3 skills that were studied here, anthropometric data about the pupils, world statistics, etc.
- B. The testing method. This method helped in applying the Three-Cone Drill.
- C. The statistical-mathematical method for analyzing and interpreting the data, and the graphical representation method. Following the testing, the data was centralized, and analyzed: name, anthropometric measurement and recorded times; then the data was expressed in figures.
- D. The observation method. This method helped in the observation of how the children manifest during the tests, and in the selection of the ones who eventually were subjected to the test, because of various factors: inadequate clothing, health, psychological state, medical excuse, nervousness, etc. that could have affected the final results. Thus, the factors that could have had negative effects on the research were excluded.

3. Development of the research and interpretation of the data

The research was conducted between March 1-30, 2017, in two Bacau schools. The test was applied to three sixth grade units with the help and under the supervision of their teachers, at the "Alec Russo" school of Bacau and the "Alexandru Safran" school of Bacau.

The Three-Cone Drill test belongs to the authors M.P. Reiman, RC. Manske who have described it in their book, "Functional testing in Human Performance" (the chapter "Speed, Agility and Quickness Testing"), Human Kinetics, 2009.

The test used the following materials: 3 cones, a timer, an adherent surface and a measuring tape.

The working procedure was the following:

1. Three cones were placed in the shape of the letter L, the distance between each of them being of 5 yards (4.6 m).
2. The subjects start from cone A, touching cone B and then running back to A.
3. Then they sprint again, going around cone B and running toward cone C.
4. They go around cone C, then cone B, and run toward the starting point.
5. The subjects are allowed to complete the course once as warm-up and to familiarize themselves with its particularities.
6. The subjects can complete it twice, their best performance being recorded.

Figure 1 presents the applied test (*image taken from "Functional testing in Human Performance, Speed, Agility and Quickness Testing", Human Kinetics, 2009.*

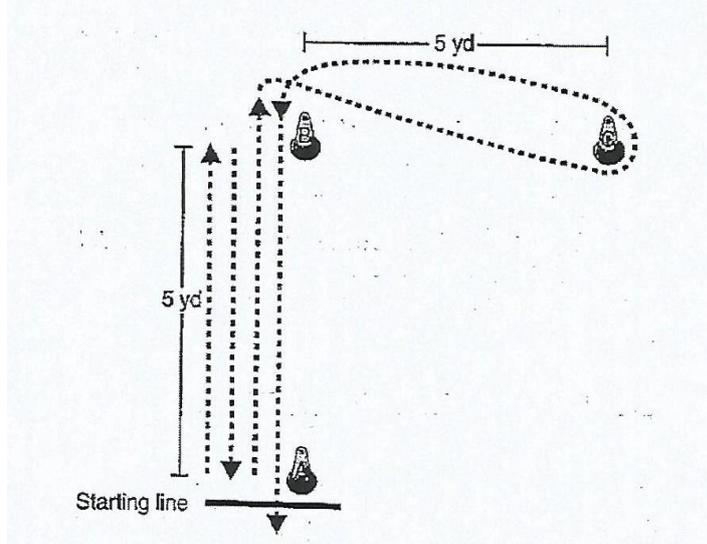


Figure 1 The Three-Cone Drill (*MP. Reiman, RC. Manske who have described it in their book, "Functional testing in Human Performance" (the chapter "Speed, Agility and Quickness Testing"), 2009.*

In order to compare the level of physical development of Bacau children and of children in other areas, Table 1 presents the data regarding the average development of height and weight in children, according to their age, data taken from the professional literature, collected by specialized centers in the USA.

Table 1 Data regarding the average development of height and weight in children, according to their age

Development table: weight and height				
Age	Average weight (kilograms)		Average height (centimeters)	
	Females	Males	Females	Males
12 yrs.	44.89	42.07	153.19	151.43
12 yrs. 6 mo.	47.88	44.89	156.26	154.79
13 yrs.	50.49	47.94	158.70	158.49
13 yrs. 6 mo.	51.64	51.69	159.35	160.98

The subjects comprised in this study and their results during the tests are presented in the tables 2-4.

The name with the sign * represents a female subject.

Table 2 Test results recorded by the sixth graders from the "Alec Russo" School of Bacau

Initials	Height (centimeters)	Weight (kilograms)	Time (seconds)
B.A.	168	55	11.90
M.L.	159	56	11.74
B.A.*	164	50	11.24
G.B.	159	47	10.69

C.G.	159	45	11.25
P.M.*	158	40	10.58
J.C.*	152	40	11.34
R.I.*	152	31	11.09
S.G.*	157	32	10.50
R.D.*	166	46	12.09
V.B	169	60	12.41
C.M.	170	56	9.94
P.A.	166	55	10.04
B.V.	165	79	13.28
C.R.*	163	58	11.05
I.A.*	163	67	10.71

Graphically, the results are expressed as follows (Figure 1).

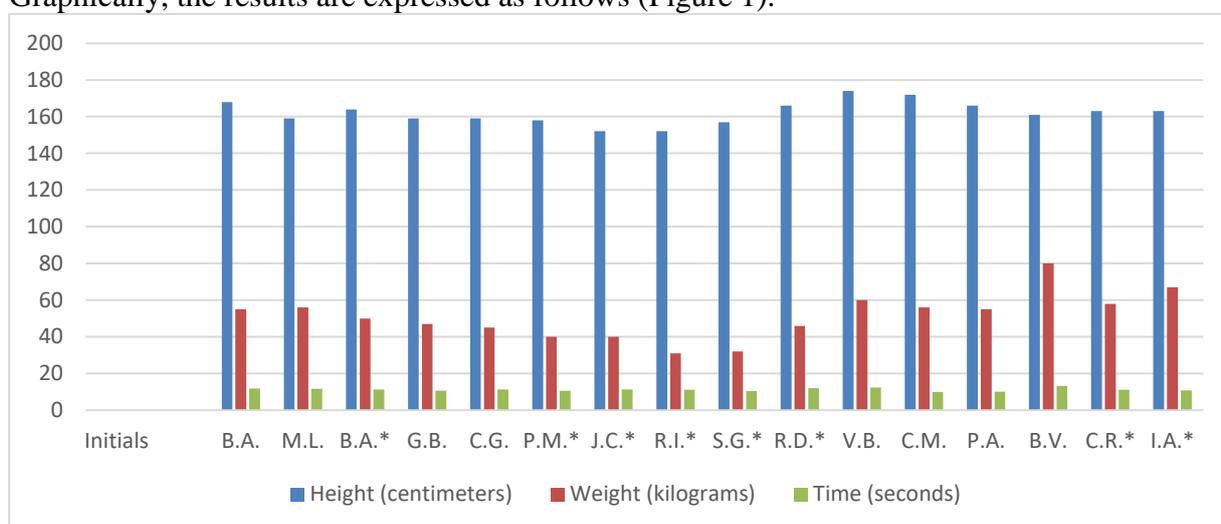


Figure 2 Test results recorded by the sixth graders from the "Alecu Russo" School of Bacau

Table 3 Test results recorded by the sixth graders A from the "Alexandru Safran" School of Bacau

Initials	Height (centimeters)	Weight (kilograms)	Time (seconds)
A.V.	162	59	10.88
F.A.*	159	80	12.56
C.A.	159	44	10.65
P.A.*	155	43	10.13
P.C.*	172	56	11.15
T.R.	142	40	10.42
A.A.	140	45	10.88
A.T.*	155	46	11.95
B.D.	161	48	12.21
C.E.*	153	50	12.04
C.D.	171	63	12.13
C.D.*	161	35	12.05
C.R.*	148	37	11.17

C.M.	157	35	11.40
C.V.	165	63	9.24
D.R.	151	48	12.14

Graphically, the results are expressed as follows (Figure 2).

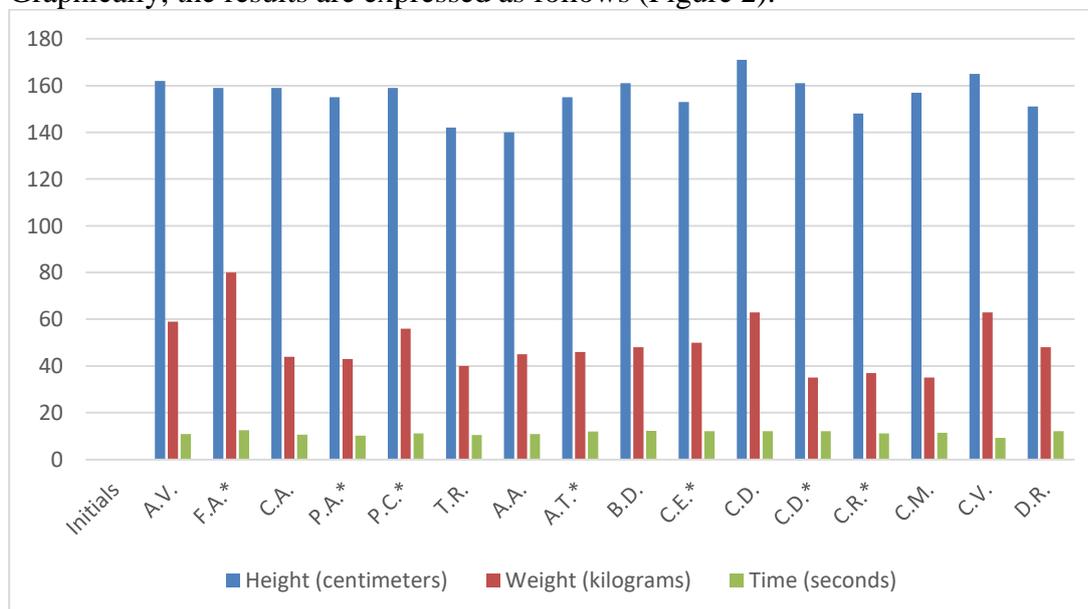


Figure 3 Test results recorded by the sixth graders A from the "Alexandru Safran" School of Bacau

Table 4 Test results recorded by the sixth graders B from the "Alexandru Safran" School of Bacau

Initials	Height (centimeters)	Weight (kilograms)	Time (seconds)
G.L.*	152	41	11.58
H.G.	154	39	10.79
H.A.	150	60	12.24
N.R.	156	58	9.98
O.P.	162	65	10.77
O.M.*	149	31	11.87
P.A.	167	47	9.65
S.L.*	147	40	11.29
T.M.	156	67	9.33
V.C.	165	67	11.15
V.D.	165	55	11.18
V.A.*	153	37	10.14
V.D.	157	42	12.16
V.L.	168	64	11.83
R.M.*	154	42	11.26
G.A.*	158	48	10.12

Graphically, the results are expressed as follows (Figure 3).

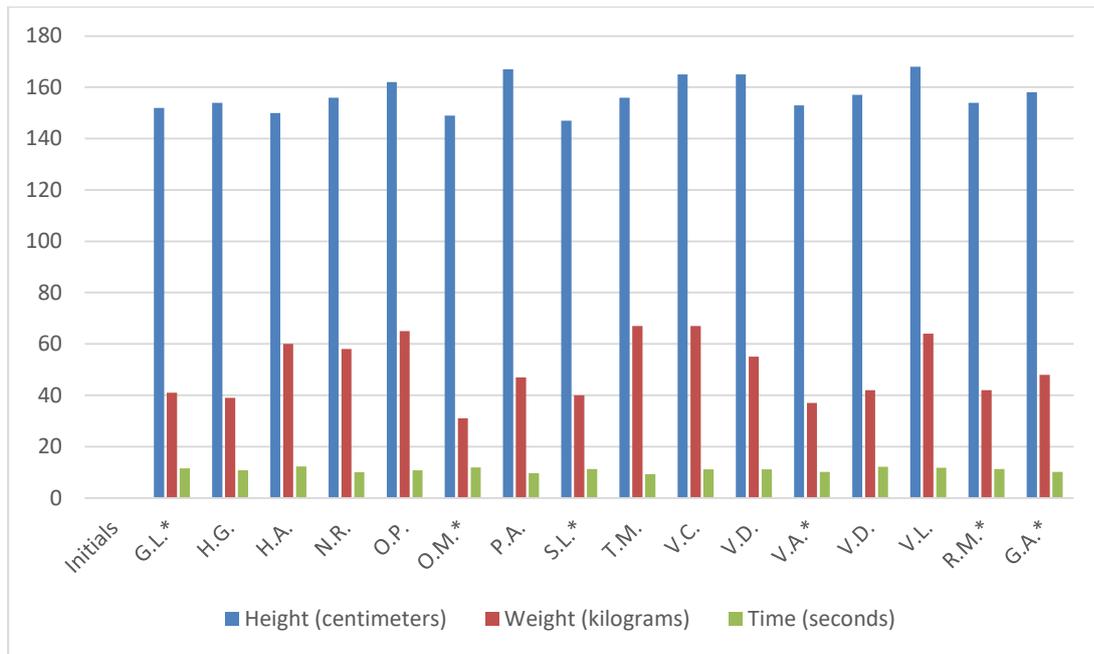


Figure 4 Test results recorded by the sixth graders B from the "Alexandru Safran" School of Bacau

In order to observe the differences between the male and the female subjects, the particularities that are specific to puberty, an average was calculated for the anthropometric measurements and the recorded times.

The following values were recorded for the weight:

Females – 54,14

Males – 43,95

Figure 5 presents these averages.

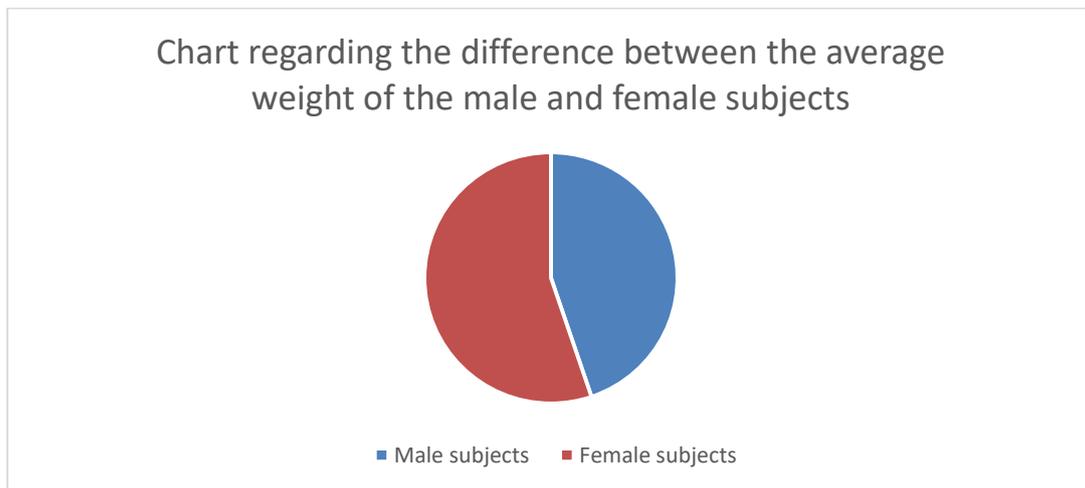


Figure 5 Difference between the average weight of the male and female subjects

For the height, the data was the following:

Females – 155 cm

Males – 153 cm

Figure 6 presents these averages.

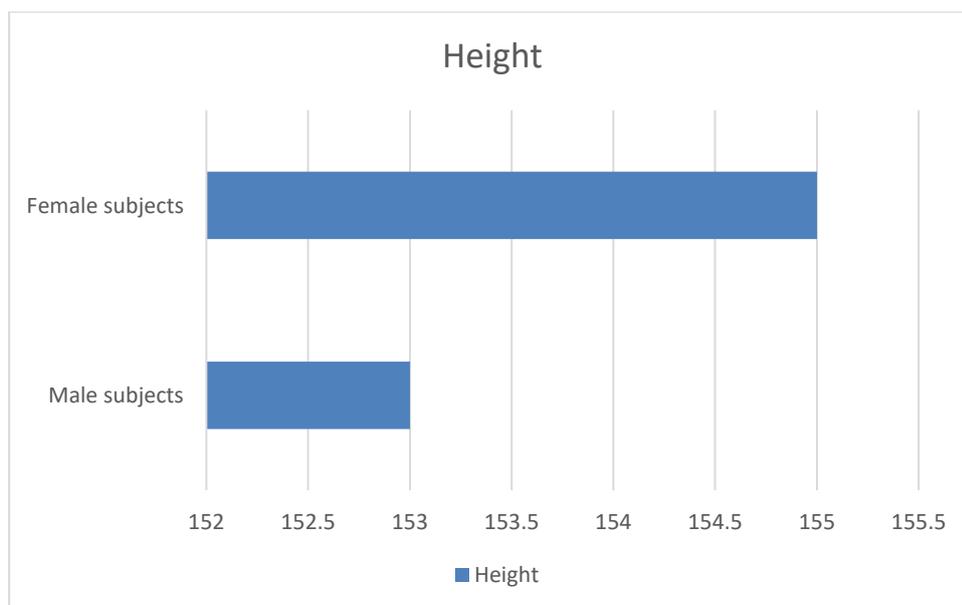


Figure 6 Difference between the average height of the male and female subjects

The average times recorded by the female subjects (21 girls) and by the male subjects (27 boys), in all the three sixth grade units, during the test, are presented in tables 5 and 6.

Table 5 The average values recorded by the female subjects

<10s	>10s and <11s	>11s and <12	>12
0	6	11	4

Table 6 The average values recorded by the male subjects

<10s	>10s and <11s	>11s and <12	>12
5	8	7	7

4. Conclusions

In conclusion, the data collected with the help of the *Three-Cone Drill* and the professional literature shows that **speed** varies according to gender, age, weight, height, and to the connection between height and weight. The female subjects recorded an average time of **11,20s - 11.40s**, while the male subjects recorded an average time of **10.90s - 11.10s**. These differences can be observed in the tables above, and one could see that the boys had the best average times: **9.24s, 9.33s**; and the worst times belonged to the girls: **12.56s, 12.09s**.

One can observe that the worst time belonged to a boy, **13.28s**; after comparing the table with the subjects' measurements and the table with the world averages, one can see why - this boy has a weight over 35 kilograms above the world average, and a height over 10 centimeters above the world average.

The best times were recorded by the subjects with their height-weight ratio close to the world average, this favoring the best performance of the motor act.

It can be said that **the lateral speed, the agility, and the body control** are influenced by height, weight, and by the relation between them.

5. References

- MP. Reiman, RC. Manske, „Functional testing in Human Performance, Speed, Agility and Quickness Testing”, Human Kinetics, 2009.
- RAȚĂ G., Didactica educației fizice și sportului, Alma Mater, Bacău, 2004.
- Ababei Cătălina, Bazele generale ale atletismului, Alma Mater, Bacău, 2010.
- https://www.frh.ro/img_stiri/files/Particularitati%20fiziologice%20de%20varsta%20si%20oglundirea%20lor%20in%20dezvoltarea%20calitatilor%20motrice%20la%20copii%20si%20juniori.pdf
- http://www.qbebe.ro/copilul/sanatate/greutatea_si_inaltimea_copilului_tabel_de_dezvoltare_318_ani

COMPARATIVE STUDY REGARDING THE TESTING OF THE ABILITY TO CONTROL THE STRENGTH, SPEED, AND DYNAMIC BALANCE IN BACAU COUNTY SIXTH GRADERS

POPA ROXANA-NICOLETA, ROTARIU MARIA-MONICA
"Vasile Alecsandri" University of Bacau,
e-mail: catalinaa_compte@yahoo.fr

Abstract

Strength, speed and dynamic balance are some of the basic motor skills that a person needs to acquire up to a certain age, through exercise. The Romanian Language Dictionary defines the **jump** as being " **the sudden take-off of a body from an initial position and movement in a certain direction.**". Considering this definition, the following test was applied: "**the "Six-Meter Timed Hop"**", in order to test the performance speed and the dynamism of the Bacau sixth graders. The "Six-Meter Timed Hop" test belongs to the authors MP. Reiman, RC. Manske who have described it in their book, "Functional testing in Human Performance" (the chapter "Speed, Agility and Quickness Testing"), Human Kinetics, 2009. This study used the following research methods: the documentation method, the observation method, the testing method, the statistical-mathematical method for analyzing and interpreting the data, and the graphical representation method.

Keywords: jumping, cones, strength

1. Introduction

Balance is an important factor for all motions, representing an individual's ability to maintain an equilibrium in relation to the gravitational force (<http://www.copilul.ro/disney/invatam-sa-ne-dezvoltam-prin-miscare/mersul-si-mentinerea-echilibrului-copii-activi.html>). A good static balance is very important for the balance during motion. The development of a good sense of balance helps learning certain coordinated movements, which allow the child to move with confidence that she will not fall and hurt herself. When the child can manage better the activities demanding movement, her mind is free to focus on other things at the same time. Static balance is the child's ability to maintain her equilibrium in a static position, such as standing on one leg. Dynamic balance is the child's ability to maintain her equilibrium while her body is in motion, such as walking on a balance beam. The object balance is the child's ability to hold an object in equilibrium on her body or transport one or more things, such as a ball or a bean sack.

Dynamic balance is defined by the Romanian Language Dictionary as an "*equilibrium determined by two opposing processes that happen with the same intensity*". Strength is defined by the same dictionary as being "*an ability of the living beings to perform physical actions by using the muscles; physical strength*".

2. Research objectives, methods, hypothesis

Considering the previous definitions, the following test was applied: "**the "Six-Meter Timed Hop"**", in order to test the performance speed and the dynamism of the Bacau sixth graders. This represented also the main objective of the research.

The "Six-Meter Timed Hop" test belongs to the authors MP. Reiman, RC. Manske who have described it in their book, "Functional testing in Human Performance" (the chapter "Speed, Agility and Quickness Testing"), Human Kinetics, 2009. This study used the following research methods: the documentation method, the observation method, the testing

method, the statistical-mathematical method for analyzing and interpreting the data, and the graphical representation method. The starting hypothesis was the following:

A testing of the Bacau sixth graders using the Six-Meter Timed Hop could highlight the children's ability to control their strength, speed and dynamic balance at their age. This paper's tasks aimed to accomplish the objective and consisted in establishing the grades on which the test will be applied, obtaining the approval and the support of the teachers in applying the test, choosing the equipment and the ways in which the tests will be performed.

3. Development of the research and interpretation of the data

The research was conducted between March 1-30, 2017, in two Bacau schools. The test was applied to three sixth grade units with the help and under the supervision of their teachers, at the "Alec Russo" school of Bacau (teacher: Ababei Alina) and the "Alexandru Safran" school of Bacau (teacher: Gosman Cristina).

The Three-Cone Drill test belongs to the authors M.P. Reiman, R.C. Manske who have described it in their book, "Functional testing in Human Performance" (the chapter "Speed, Agility and Quickness Testing"), Human Kinetics, 2009. The equipment consisted in cones for marking the track, a timer, an adherent surface and a measuring tape.

The working procedure was the following:

1. The start and finish lines were marked with cones at a distance of 6 m between them.
2. The pupils position themselves with one leg behind the start line, their hands on their hips.
3. They were asked to cover the 6 meter distance hopping on one leg, as quickly as possible.
4. The hops had to be high and long.
5. The timer stopped when the pupil crossed the finish line.
6. Two repetitions were performed, the best one being recorded.

Figure 1 presents the applied test (*image taken from "Functional testing in Human Performance, Speed, Agility and Quickness Testing", Human Kinetics, 2009.*

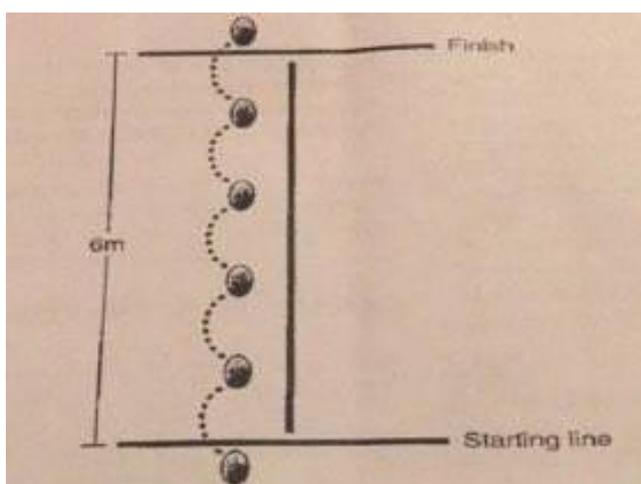


Figure 1 The Six-Meter Timed Hop test (image taken from "Functional testing in Human Performance, Speed, Agility and Quickness Testing", Human Kinetics, 2009)

The results recorded during the tests and the anthropometric measurements are presented in tables (1-3) and figures (2-5).

The name with the sign * represents a female subject.

Table 1 Test results recorded by the sixth graders from the "Alec Russo" School of Bacau

Initials	Height (centimeters)	Weight (kilograms)	Time (seconds)	
			Right	Left
B.A.	168	55	02.97	02.14
M.L.	159	56	03.81	04.53
B.A.*	164	50	04.06	03.52
G.B.	159	47	02.52	03.66
C.G.	159	45	02.82	03.16
P.M.*	158	40	02.11	03.24
J.C.*	152	40	02.80	02.85
R.I.*	152	31	02.94	02.09
S.G.*	157	32	03.13	03.00
R.D.*	166	46	04.24	04.37
V.B	174	60	03.54	04.47
C.M.	172	56	03.21	02.44
P.A.	166	55	03.13	03.28
B.V.	161	80	03.38	03.06
C.R.*	163	58	03.26	03.55
I.A.*	163	67	03.39	02.92
AVERAGE			3.21	3.27

Graphically, the results are expressed as follows (Figure 1).

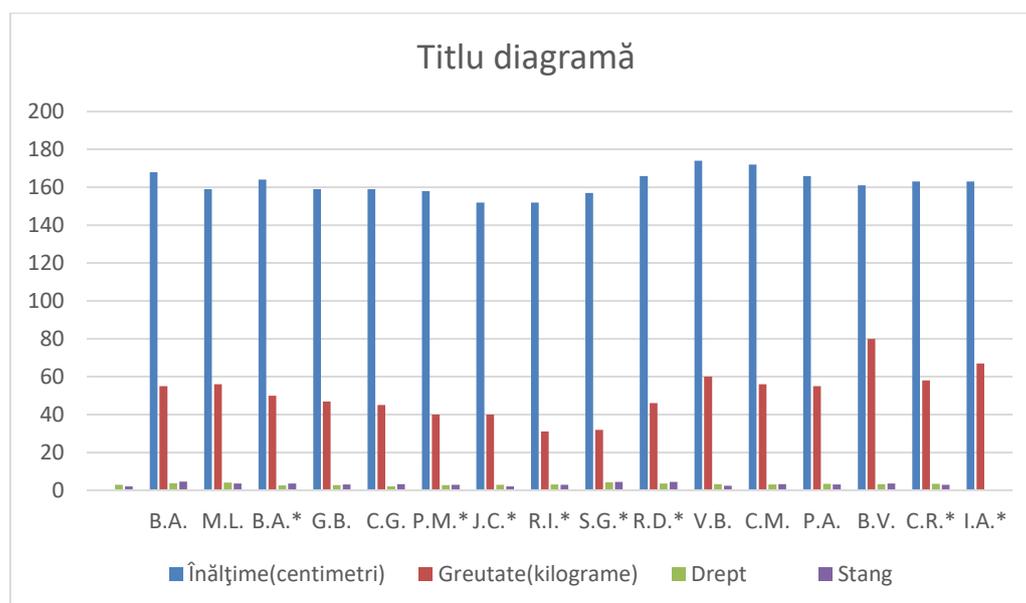


Figure 2 Test results recorded by the sixth graders from the "Alec Russo" School of Bacau

Table 3 Test results recorded by the sixth graders A from the "Alexandru Safran" School of Bacau

Initials	Height (centimeters)	Weight (kilograms)	Time (seconds)	
			Right	Left
A.G.	163	59	03.96	03.35
F.A.*	159	80	04.56	04.18
C.A.	159	44	03.86	03.50
P.A.*	155	43	02.56	02.51
P.C.*	159	56	02.52	02.79
T.R.	142	40	04.06	03.60
A.A.	140	45	02.51	02.75
A.T.*	155	46	03.65	03.12
B.D.	161	48	03.68	03.56
C.E.* (excused)	153	50	-	-
C.D.	171	63	03.13	03.30
C.D.*	161	35	02.86	02.83
C.R.*	148	37	02.82	02.91
C.M.	157	35	03.29	02.96
C.V.	165	63	02.52	02.31
D.R.	151	48	02.87	03.12
AVERAGE			3.26	3.12

Graphically, the results are expressed as follows (Figure 2).

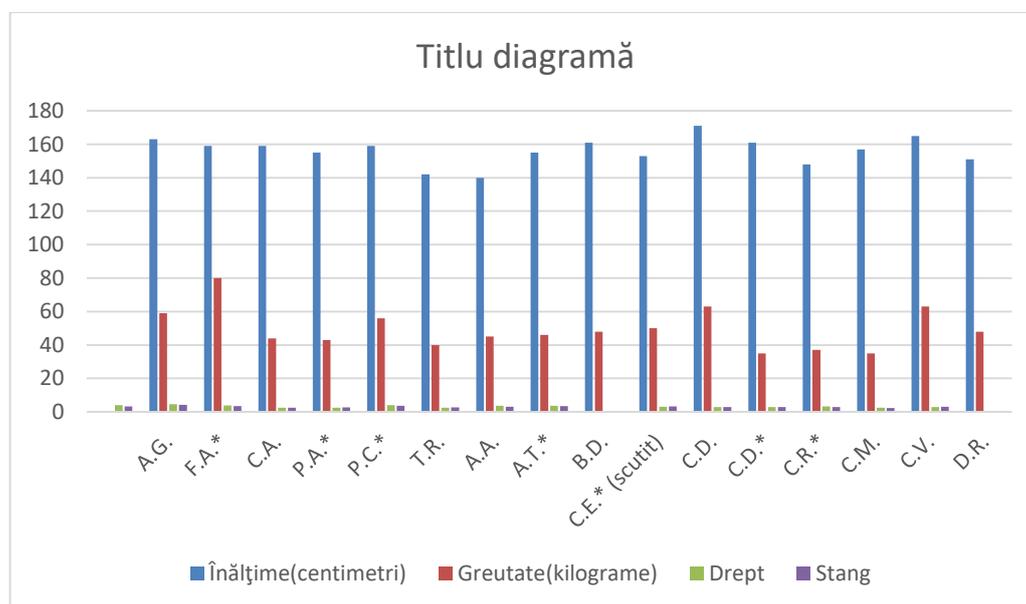
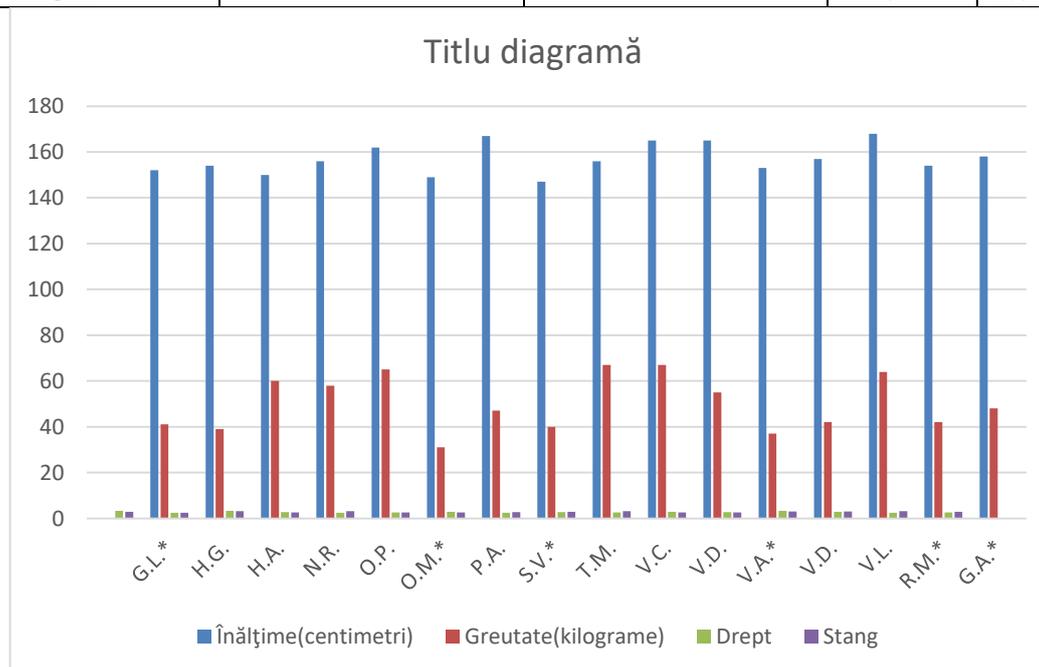


Figure 3 Test results recorded by the sixth graders A from the "Alexandru Safran" School of Bacau

Table 4 Test results recorded by the sixth graders B from the "Alexandru Safran" School of Bacau

Initials	Height (centimeters)	Weight (kilograms)	Time (seconds)	
			Right	Left
G.L.*	152	41	03.30	02.82
H.G.	154	39	02.43	02.43
H.A.	150	60	03.33	03.08
N.R.	156	58	02.75	02.59
O.P.	162	65	02.46	03.18
O.M.*	149	31	02.65	02.52
P.A.	167	47	02.91	02.55
S.V.*	147	40	02.48	02.69
T.M.	156	67	02.74	02.91
V.C.	165	67	02.64	03.14
V.D.	165	55	02.84	02.56
V.A.*	153	37	02.75	02.52
V.D.	157	42	03.25	03.00
V.L.	168	64	02.91	02.95
R.M.*	154	42	02.40	03.08
G.A.*	158	48	02.65	02.80
AVERAGE			2.78	2.81

**Figure 4** Test results recorded by the sixth graders B from the "Alexandru Safran" School of Bacau

The average results for the tested grades are presented in Table 4.

Table 4 Average results for the tested grades

Sixth grade "Alecu Russo" School	Sixth grade A "Alexandru Safran" School	Sixth grade B "Alexandru Safran" School
The average results for the right leg and the left leg (sec)		
3.21(R)	3.27(L)	2.78(R)
	3.26(R)	2.81(L)
	3.12(L)	

4. Conclusions

As it was stated at the beginning of the paper, strength, speed and dynamic balance are some of the basic motor skills that a person needs to acquire up to a certain age, through exercise.

In this sense, the hypothesis stating that *A testing of the Bacau sixth graders using the Six-Meter Timed Hop could highlight the children's ability to control their strength, speed and dynamic balance at their age*, was partially confirmed, because the small number of children that have been tested did not allow a generalization of the values. What can be noted is that the highest level of ability to control strength, speed and dynamic balance is encountered in grade six B from the "Alexandru Safran" School of Bacau, where the average value is 2.78 seconds for the right leg jumps, and 2.81 seconds for the left leg jumps. For the other two grades, the values are much closer, 3.21 - 3.27 seconds for the right leg and 3.27 - 3.12 for the left leg. Because professional literature gives average values for these skills **only for professional athletes**, this data, correlated with other measurements that the authors of this study want to conduct on all the sixth graders in Bacau county, they would like for these results to become a reference for other geographical areas similar to Bacau.

5. References

- MP. Reiman, RC. Manske, „Functional testing in Human Performance, Speed, Agility and Quickness Testing”, Human Kinetics, 2009.
- RAȚĂ G., Didactica educației fizice și sportului, Alma Mater, Bacău, 2004
- Ababei Cătălina, Bazele generale ale atletismului, Alma Mater, Bacău, 2010.
- (<http://www.copilul.ro/disney/invatam-sa-ne-dezvoltam-prin-miscare/mersul-si-mentinerea-echilibrului-copii-activi.html>)
- www.dex.ro

EVALUATION OF THE CONTEMPORARY STATE AND DEVELOPMENT OF PHYSICAL CULTURE AND SPORTS IN THE REPUBLIC OF TAJIKISTAN

*Saidova M.H. Davlyatova M.
Tajik State University of Commerce
Dushanbe, Tajikistan
Tajik Institute of Physical Culture of Tajikistan named after S. Rakhimov
e-mail: Saidova-60@mail.ru*

The article examines the main economic indicators of the physical culture and sports industry, as well as assesses the current state of development of physical culture and sports in the Republic of Tajikistan.

Key words: physical culture and sport, indicators, sports and sports services, sports competitions, sports achievements.

Introduction. In terms of economic development strategic goal for services is to maintain stability in the market without the deterioration of the situation with the service people. You must existing business services to the residents to generate new services in order to compete with already functioning and thus increasing the volume of services provided.

Therefore, the economic analysis of the performance of the national economy show an improvement in important performance indicators in all industries and spheres of economy of the Republic of Tajikistan [5].

It is important to note that the development of the economy of the Republic of Tajikistan, appropriate provision of the General terms and conditions for its effective functioning, which involves further development of all sectors of the economy, particularly physical culture and sports as an integral component of the services sector cannot fully satisfy the demand of the population in physical culture and sports services at the required quality level.

System analysis shows that the factor of development of physical culture and sports, gradually occupies an increasingly important place among the main factors and conditions that determine the economic and social development of the Republic of Tajikistan.

The analysis of functioning of physical culture and sports of the Republic is based on the main indicators of development in the Republic of Tajikistan for 2008-2015, where it is possible to objectively evaluate the existing degree of development of the industry and the degree of security of the Republic.

For the analyzed period we found that an increase in the total number of sports facilities by 1.47 times. In this one-time bandwidth sports facilities increased 1.92 times, state the number of physical workers in 1.66 times the number of teams of physical education - by 1.7 times and the number involved in clubs and groups for sports, clubs and groups fizkulturno-an improving orientation at 1.91 times.

Today in the world has 35 sports included in the summer and winter Olympic Games. In addition to these sports, the international Olympic Committee recognizes 29 types of sport that for one reason or another were not included in the Olympic program, but are very popular in the world.

On this basis, we believe that in the Republic of Tajikistan, the priority should be the development of Olympic sports.

The leader of the nation, the President of the Republic of Tajikistan Emomali Rahmon in his speech at the opening ceremony of the state institutions of televisions "Verses", "Sinamo" and the Academy of media March 1, 2016 noted that the state Committee for television and radio broadcasting, youth Affairs, sports and tourism, sports federations and the NOC to take effective measures for the further development of Olympic sports.

In recent years, the country is a lot of work for the effective functioning and development of the sphere of physical culture and sports. After the meeting of President Emomali Rahmon on 20 December 2010 with the representatives of ministries and departments, Executive bodies of local authorities, institutions and associations of entrepreneurs in all regions of Tajikistan was built about 2.5 thousand sports facilities totaling more than 250 million somoni, and in all regions of the country, the existing sports facilities were reconstructed and repaired.

In the Republic of Tajikistan an important role in the organization of physical culture and sports play a functioning sports Federation. Currently, function and evolve 56 sports federations for the training of athletes. Of these, 27 sports federations for Olympic sports and 29 sports federations of non-Olympic sports.

It is important to note that training athletes are governed by the Law of the Republic of Tajikistan "On athletic training" from March 19, 2013, No. 953.

Thus, a special role in the provision of sports services are playing sports school [1,2,4]. The analysis of the study showed that the number of sports schools in the Republic in 2015, compared with 2006 increased 1.29 times, in Sogd region of 1.20 times, and in Khatlon region, Dushanbe, RRS and GBAO has not been a significant change.

In addition, we analyzed the dynamics of the number of active coaches in sports schools in the regions of the Republic of Tajikistan for 2006-2015, the Results show that during the period under review observed changes in the dynamics of the number of active coaches in sports schools in the regions of the Republic. The analysis showed that in the Republic of Tajikistan the total number of active coaches in sports schools from 2006 to 2015 increased 1.58 times, including with higher education sports by 1.75 times, with special secondary education 1.10 times the number of women to 5.70% and persons with no education by 1.17 times.

In recent years special attention is paid to financing of sports schools in the regions of the Republic of Tajikistan. The analysis showed that during the reporting period for the whole Republic observed increased funding for sports schools in the regions of the Republic of Tajikistan. If in the whole country, the funding has increased 2.13 times, respectively, in GBAO, Sughd, Khatlon regions, RRS and Dushanbe, the unions and the Committee has increased 1,66; 1,99; 1,65; 1,74; 1,66; 6,39 and 2.28 times.

This suggests that the Republic pays due attention to the support of the sports schools which play a leading role in training highly skilled athletes.

In the Republic special attention is paid to holding the sports competitions. The dynamics of sports competitions and the number of participants in the Republic of Tajikistan for 2006-2015 is shown in table.1.

Results table. 1 show that during the period under consideration the dynamics of sporting events there are significant changes in the country.

Table 1. The dynamics of sports competitions and the number of participants in the Republic of Tajikistan for 2006-2015

denomination	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2015 2006 in times
Republican sport.activities, including:	51	60	79	100	76	79	103	107	108	129	2,53
Republican events	27	41	60	75	51	53	83	85	85	113	4,19
Championships	24	19	19	25	25	26	20	22	23	24	1,00
The number of participants, including women, persons	2142	3247	3708	4009	4280	4590	4860	5341	9719	9806	4,58
	122	292	323	490	532	686	450	839	1341	1891	15,5
The holiday of Navruz, a thousand.	-	-	-	-	-	-	252,2	283,9	325,4	326,8	1,29
Day of running, including women.	75,1	82,3	79,0	85,0	151,2	272,7	323,0	335,5	357,7	383,3	5,10
	3,5	4,2	8,4	13,8	18,3	20,2	22,7	16,5	18,8	122,1	35,12

Source: author's Calculations based on statistical data of the Committee of youth Affairs, sports and tourism under the Government of the Republic of Tajikistan. Dushanbe, 2015.- 267c.

It is important to note that in 2006 there were only 51 Republican sports events and in 2015 they increased to 129, where it increased by 2.53 times. In addition to the Republican events has increased by 4.19 times, the Championships are held constant, the number of participants increased 4.58 times and women taking active part increased 15.5 times.

In recent years significantly increased the growth of the participation of athletes of the Republic of Tajikistan in international sports competitions. Dynamics of the number of participation of athletes of the Republic of Tajikistan in international sports competitions for 2006-2015. presented in table.2.

Table 2. Dynamics of the number of participation of athletes of the Republic of Tajikistan in international sports competitions over the 2006- -2015

Number	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2015-2006 times
International competition	11	16	18	23	27	30	39	48	90	60	5,45
Number of participants athletes	204	214	244	286	320	364	470	684	1408	293	1,44

Source: author's Calculations based on statistical data of the Committee of youth Affairs, sports and tourism under the Government of the Republic of Tajikistan. Dushanbe, 2015.- 267c.

As can be seen from table 2. during the period under review, dynamics of the number of participation of athletes of the Republic of Tajikistan in the international sports competitions for 2006-2015. has changed significantly. If in 2006 there were 11 international competitions and has taken part 204 of the athlete in 2015, has increased the number of international competitions at 5.45 times the number of Tajik athletes at 1.44 times. In addition, the growth of achievements of the athletes of the Republic of Tajikistan in international competitions (tab.3).

Table 3. The dynamics of sports achievements of athletes of the Republic of Tajikistan in international competitions for 2006-2015.

Events	The total number of medals	Including:		
		gold	silver	bronze
2006	98	31	26	41
2007	131	37	41	48
2008	180	56	48	76
2009	217	57	58	102
2010	219	66	61	92
2011	307	92	88	127
2012	432	118	120	185
2013	461	100	130	231
2014	897	250	243	404
2015	629	223	178	228
2015 to 2006 in %	6,42	7,19	6,85	5,56

Source: author's Calculations based on statistical data of the Committee of youth Affairs, sports and tourism under the Government of the Republic of Tajikistan. Dushanbe, 2015.- 267c.

As can be seen from table 3 for 2006-2015. the dynamics of sports achievements at the international competitions of the Republic of Tajikistan has significantly changed. The analysis showed that the period of 2006-2015, the total number of medals won increased by 6.42%, including gold increased by 7.19%, silver by 6.85% and a bronze at 5.56 percent. This suggests that the Government of the Republic of Tajikistan, Committee of youth Affairs, sports and tourism under the Government of the Republic of Tajikistan, the National Olympic Committee is a financial support for the training of athletes (tab. 4).

Table 4. Dynamics of volume of financing for participation in international competitions of athletes of the Republic of Tajikistan for 2015. (thousand TJS)

Events	To participate in international competitions
<i>The predominant sports</i>	
Daquan-do (ITF)	55000,00
Sambo	80000,00
<i>Vital sports types, including:</i>	
Cycling	10000,00
gymnastics and acrobatics	10000,00
rowing	40000,00
<i>Sports types, including:</i>	
rod	10000,00
shooting	50000,00
ski	40000,00
karate-do	15000,00
kekushinkay karate	15000,00
armrestling	15000,00
universal fight	10000,00
Wushu	20000,00
fight	10000,00
<i>Sport for the disabled</i>	
Olympic sports	50000,00
in total	420000,00

Source: author's Calculations based on statistical data of the Committee of youth Affairs, sports and tourism under the Government of the Republic of Tajikistan. Dushanbe, 2015.- 267c.

As can be seen from table 4 to participate in international competitions of athletes of the Republic of Tajikistan for 2015 was allocated 420,0 thousand somoni.

It should be noted that for the implementation of the action plan for the Program of development of physical culture and sports in the Republic of Tajikistan for 2011-2015 was allocated 528,8 thousand somoni and for the football development Programme in the Republic of Tajikistan for 2012-2016 - 228.6 thousand somoni, as well as for other expenses - 584,1 thousand somoni.

In addition to the Republic special attention is paid to the financing of the Republican sports competitions (table.5).

Table 5. Funding held in 2015 Republican sports competitions in the Republic of Tajikistan (thousand somoni)

Events	FINANCING					
	for meals	for accommodation	the jury and the working staff	to participate in the Republic the championship	Procurement of prizes, including	in total
					Cup. medals, diploma	
The Olympics universities of the Republic of Tajikistan	92,86	58,23	26,42	35,80	0,489	213,792
Mass sports	170,80	114,96	41,30	7,53	0,390	334,98
National sports	75,320	53,160	17,640	14,430	0,402	160,95
The predominant sports	221,48	155,480	51,730	247,500	0,428	686,62
Vital sports	35,70	24,960	12,160	45,180	0,484	118,48
Sports	128,275	83,610	42,860	300,490	0,751	555,99
Not Olympic sports	142,940	106,650	53,850	84,380	0,815	388,64
Sport for the disabled	37,800	26,160	120,40	54,640	0,321	239,32

Source: Compiled on the basis of the financing plan of sporting events of the Republic of Tajikistan Committee on youth Affairs, sport and tourism under the Government of the Republic of Tajikistan.- Dushanbe, January 2015.- 87c.

As can be seen from table 5, for holding national competitions in 2015. from the budget of the Republic of Tajikistan was allocated 2698,7 thousand somoni.

In result of the conducted researches we have found that there are the following main facts in the development of physical culture and sports at the stage of formation of market relations:

- currently in the Republic of physical culture and sport has been about 25-30% of the population, whereas in developed countries this figure is 70%;
- in a transition economy has been a negative change in the formulation of physical culture and sports work in the workforce: enhancing the value of physical and sport services made inaccessible institutions of physical culture and sports for the population;
- one-time network capacity sports and recreational facilities is 45% to the regulatory provision;
- regulatory framework of the sector does not allow to exercise the rights of citizens of the Republic of Tajikistan in the field of physical culture and sports;

□ for some sports in the Republic of Tajikistan lack modern technically equipped sports facilities where you can prepare for participation in the Olympic games and other international competitions.

Therefore, to overcome the negative phenomena, we consider it expedient to develop science-based concept of development of physical culture and sports of the Republic of Tajikistan for the period up to 2025.

Thus, we believe that the analysis enables us to draw a conclusion about what is really given due attention to the economic aspects of the functioning and development of physical culture and sports in the Republic of Tajikistan, but there is a need of improvement with regard to the requirements of the present stage of development of the market economy.

LIST OF LITERATURE

1. Barchukov I. S. In Physical education and sport: methodology, theory and practice /I. S. Barchukov, A. A. Nesterov. - M.: Academy, 2006. - 528c.
2. Galkin V. V. Economics of sports and sports business /V. V. Galkin. - M.: "KnoRus", 2007.- 320 p.
3. Zholdak V. I., Zuev V. N. Management in the sphere of physical culture and sport/ V. I. Zholdak, V. N. Zuev. - Tyumen "The Vector The Beech", 2002. - 320 p.
4. Saidova M. H. Sustainable development of economic relations in the sphere of physical culture and sports in the Republic of Tajikistan / Saidova M. H. // Scientific journal "Money and Relationship". – Poland, 2013. - №3 (60). - P. 176-182.
5. Radjabov R. K. Regional aspects of development of sphere of paid services to the population in a transition economy: monograph / R. K. Radjabov. -Dushanbe: Irfon, 2013. - 213 c.
6. Kholodov Zh. K. Theory and methods of physical education and sport / Zh. K. Kholodov, V. S. Kuznetsov. - Moscow: Akademiya, 2006. – 480 p.
7. [Electronic resource]. www.prezident.tj.

SPORT AND EVENT QUEST-TOUR AS AN INNOVATIVE FORM OF YOUTH TOURISM

*Moskalenkova, A, Kravchyk, T
Siberian State University of Physical Education and Sports
Omsk, Russia
e-mail: aleksenok_25@mail.ru*

Abstract. In this article youth forms of leisure activities in different regions of Russia are analyzed. Newsworthy events in the Omsk region and the travel purpose of the Russian tourists are considered. Implementation of an innovative form of youth tourism, i.e. a quest-tour, which combines event tourism and a quest sport-oriented game, is described.

Keywords: sports and event tourism, a quest-tour, sports-oriented, youth tourism.

Significance. Today we perceive tourism as the most mass phenomenon of the XX century, as one of the brightest phenomena of our time which really gets into all spheres of life and changes the world around and a landscape. The vast territory and rich natural resources allow Russia to offer more and more opportunities for active tourism every year. The number of people interested in changing a habitual beach and a guided rest into something more extreme is growing steadily [3, p.35].

Thanks to dynamic promotion of a healthy lifestyle, many people prefer recreational activities, for example, active programs with elements of sports tourism and orienteering. Getting around during such programs can be carried out on foot, and by bicycle, by horses, on skis [2, p.171].

But the contemporary market imposes new requirements to the organization of tourist activity. Thus, the tendency of innovative tours, which includes the quest – tourism, has been traced during recent years. As the form of the trip organization a quest-tour is beyond the traditional classification, but it is a promising trend for domestic tourism development, especially for the youth. Hundreds of thousands of holidaymakers, who adore the spying adventures, prefer recreational activities, choose quest tours. According to N. D. Alekseeva, the quest is a game during which participants solve logical problems, carry out the search of the necessary information, and learn to work with various resources and to apply them [3, p.247].

Aim of the research is to develop sports and event quest-tour for the youth.

Research tasks are the following:

1. To analyze youth events in Russia.
2. To develop the program of sports and event quest-tour for the youth.

Research methods are: analysis of scientific and methodical literature, analysis of Internet resources, project development, expert assessment, methods of mathematical data processing.

Results of the research. To analyze youth events in Russia, we have considered youth forums and their program for 2014 - 2016 on the websites www.russia-business.ru, www.nashamolodezh.ru (Fig. 1).

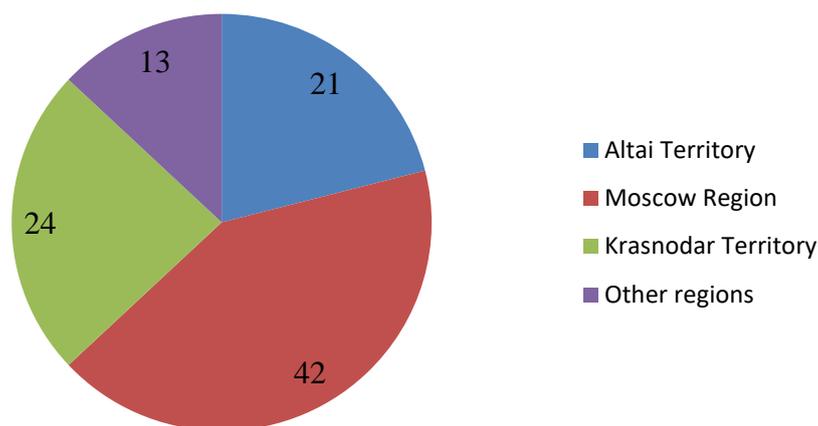


Fig. 1 Number of forums taking place in Russia, %.

Having processed the information on 26 events, we saw that of all youth forums in Russia for the period of 2014-2016 the major part was held in the Moscow region, Altai and Krasnodar Territories, the rest took place in other regions. The only youth forum "RITM" was arranged in the Omsk region.

With the help of the content analysis of the Internet resources (the official sites of municipal administration of Omsk and the Omsk region, as well as the organizations realizing any events in the region) T. A. Kravchuk and D. A. Savenkova [4, p.48] did the analysis of newsworthy events on the territory of the Omsk region for 2016. Newsworthy events of the Omsk region are classified according to the main spheres of event management and government bodies that organized them or supported. All in all in the Omsk region in 2015-2016 344 events were held, 295 events of which were connected with planned activities. Personal events were not taken into account by the authors. Major events were arranged by the Ministry of youth, physical education and sport of the Omsk region (244). The analysis of organized events has shown that 77,5% of events take place at the regional level, 15% of events at the All-Russian level and 7,5% of events take place at the international level. Systematization of newsworthy events of the region has shown that 90% of events are connected with planned activities (generally sporting events) and 10% are organizational events (exhibitions and forums). In the regional area not enough cultural events (festivals, carnivals, etc.) are held.

To reveal the topicality of the offered sports and event quest-tour to the village of Okunevo for the youth, we used researches of marketing specialists on the website www.marketing.ru. These researches have been conducted according to the results of 2014 - 2016 among the Russian citizens aged from 18 to 60 traveling about Russia (Fig. 2.).

Thus, in recent years most of the Russian tourists (69%) have preferred educational and guided tourism, event tourism and active tourism. The combination of these types in one quest-tour makes this type of tourism competitive in the tourist market. When we know the general data and we have ideas of tourists' needs, it is possible to make our own analysis of offers in Omsk where we will offer the developed by us tour.

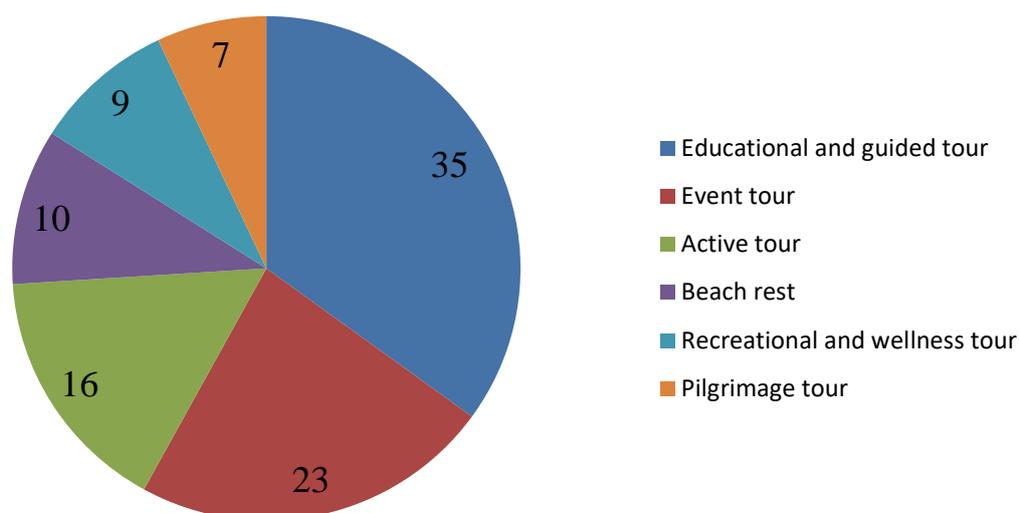


Fig. 2. Purpose of travel, %

Further, we analyzed 4 travel agencies of Omsk presented on the slide which according to the website www.turizm.ngs55.ru are the leaders of domestic tourism and develop tours to the village of Okunevo. The other travel agencies provide only accommodation in guest houses near the village of Okunevo. We compared orientations of the offered tours, programs of tours, the cohort, the number of days and the cost. Having analyzed the travel agencies offering tours to the village of Okunevo we found out that there is the only event tour, but it is not enough and the event is not the main arrangement. Other tours are educational that is not really interesting for the modern youth. Therefore to increase the interest in domestic tourism in the youth it will be urgent to develop not just an event tour, but to add the interesting program to it. That is likely that it will catch interest of not only new consumers, but also tourists having been there more than once.

We developed sports and event quest-tour to the village of Okunevo in the Omsk region for the holiday “Solstice”. On the first day the group goes to Okunevo, on arrival it tents in the camp and has supper. After dinner guests are offered to visit a recital of songs, composed and performed by amateur singers and composers, named “Around the Campfire”

On the second day the walking excursion to the monument “Tatar Ridge” is offered to the guests. It is an archaeological monument of the neo Stone Age. Now it is recognized by some religions as the place of force, and the center of the universe. They visit the Archangel Michael Chapel and the pottery “Clouds”. Finally they return to the camp and guests are offered to dine and have free time to prepare for the quest.

At 4p.m. the quest-tour named “Forgotten Tourist” starts.

The background says that the group of researchers left to find the fifth lake, in 3 days everybody returned, except one. His last MMS had the text: “I have found it” and the photo with the area which will be a reference point to you. The quest-tour contains tasks with elements of sports orienteering where the participants are required:

1. To orienteer with the help of the map;

2. To use a compass to find the right direction;
3. To run about the cross-country terrain;
4. To do the tasks of various difficulties connected with overcoming natural obstructions and use of elements of the tourist technique;
5. To look for secret codes;
6. To guess rebuses and riddles.

The quest purpose is to find the person in an hour and a half's time.

After the game we suggest guests to visit events of the Solstice festival, where dancing groups, musical performance of a folk music group, a fire spinning and "Magic spell of water ceremony" will be presented.

On the final day of the tour we suggest to visit (if desired) a fair of the Solstice festival where one can find handiworks of local and guest craftsmen. Then our tourists dine and go to Omsk.

In the course of project development of the sports and event quest-tour we searched business partners in catering services, accommodation on the route, the organizations of a transfer and excursion programs. Full cost of the tour was 2900 rub/person. A sports and event tour is commercial and if arranging the tour was made through a travel agency, then retail price would be 4000 rub/person.

Conclusions.

1. The analysis of information on youth, event activities in Russia, has shown that the Omsk region is not a popular region for organizing such an activity, as compared to other regions of Russia. But at the same time the Omsk region possesses a volume calendar of event activities which are held traditionally in the region and enter the international arena.

2. We developed sports and event weekend quest-tour to the Omsk region, that is village Okunevo, for the holiday "Solstice", aimed at development of event and quest tourism. Duration of a tour is 3 days / 2 nights. It is connected with the fact that we developed a weekend tour, during the summer period and combined it with the Solstice festival. The route type is combined as the program includes an excursion and a vigorous activity, namely the quest. A tour is for a group, it completely meets the requirements to the tour arrangement for the youth.

References

1. Alekseeva N. D. Quest excursion as an innovative form of the excursion activity / N. D. Alekseeva, E. V. Ryabov // Vector of science of Tolyatti state university. Volume: educational and psychological sciences. 2015. No. 1. Pp. 14-17.
2. Dremina A. V. Sports and wellness tourism as a means of arranging leisure of pupils / A.V. Dremina // Innovative science. 2017. No. 2-2. Pp. 170-172.
3. Klimova T. B. Experience of development of event tourism in the Russian Federation and abroad / T. B. Klimova, E. V. Vishnevskaya // Scientific result. Volume "Business and Service Technologies". 2014. No. 1. Pp. 35-41.
4. Kravchuk T. A. Structural and functional model of arranging event activities in the region / T.A. Kravchuk, D. A. Savenkova // collection according to the results of LVI correspondent scientific conference International Research Journal. The international research magazine - No. 11 (53) - Part 3 - November - 2016 Pp. 47-51

ASSESSMENT QUALITY OF SERVICES SPORTING EVENTS IN THE REPUBLIC OF KAZAKHSTAN

Iskakov, T., Kulbaev, A.

*Казахская академия спорта и туризма
Kazakh academy of sport and tourism (KazAST)*

Алматы, Казахстан

Taiyrzhan.iskakov@bk.ru

Abstract

Authors of this article studied the main problems, which meet, at the organization and holding sporting events on territories of the Republic of Kazakhstan. Methods were for this purpose applied: questioning, conversation, comparative analysis, pedagogical experiment. It is revealed that the main problem at the organization and carrying out sports actions on territories of the Republic of Kazakhstan is the small number of the viewers, the actions which are attended sports. For the purpose of attraction a large number of the audience in sporting events and to carry out promotion of a healthy lifestyle such techniques have been developed: depreciation of tickets on sports to an action, it is effective to apply outdoor advertizing on boards, advertizing on TV and radio channels; advertizing on the website of sale of sports goods.

Keywords: marketing, sports organizations, advertizing, sports actions.

Введение. Demand for sports services in the world develops prompt steps and in the conditions of the escalating competition, to the management sports the organizations of any level, it is necessary to use in due time and qualitatively effective ways and forms to hold the fans clients and to attract new. Everywhere, including in Kazakhstan, against the background of toughening of competitive fight insistence of clients to level of service grows. And at the choice of service provider in the sphere of physical culture and sport the price level, how many quality of service comes out on top not so much [1]. To involve in sporting events of visitors, the management sports the organizations enters various discounts and privileges, both for regular customers, and for appearing again, and also, develops various novelties [2].

Research objective. Improvement of quality of services of the organization and the competitions of various level which are carried out in the territory of the Republic of Kazakhstan.

Research problems:

1) To study and generalize modern the theorist - methodical and practical approaches to the organization and holding sports competitions in modern sport.

2) To develop a technique according to quality of competitions of various rank and to define quantitative norms.

3) To define features of marketing of competitive activity at competitions of various rank and in different groups of sports.

Research methods. The comparative and generalizing analysis of scientific and methodical literature, conversation method, questioning, pedagogical control, theoretical and logical analysis video and audiomaterials, methods of mathematical statistics.

Results. According to the purpose and research problems we have organized studying of the competitions of various rank held in the territory of the Republic of Kazakhstan. Monitoring of the competitions held in Kazakhstan shows that sports constructions considerably differ from each other both on compliance to rules of the international competitions, and from the point of view of requirements to various parties of functioning and use of sports constructions. In our republic a significant amount of sports constructions meets these criteria.

Following the results of monitoring of these competitions we had conditionally have allocated three main ranks of competitions. They are presented in table 1.

Table 1 – Classification of competitions of the Republic of Kazakhstan [3]

Name of competitions		
International	Republican	Regional
World Cup World Cup Asian games Championship of Asia Cup of Asia Central Asian games International tournaments	Sports contest of the people of Kazakhstan Championship of Kazakhstan, Cup of Kazakhstan Republican tournaments	Championship of the area Superiority of the regional centers Championship of the city The championship of rural and urban areas in the large cities The championship of the aul, village and equated to them

This division is rather conditional, but, nevertheless, it should be noted that in the organization of these competitions there are essential distinctions. It concerns requirements to a state and quality of training of sports constructions, degree of financial conditions, advertizing activity, a possibility of visit by their audience and fans, etc.

For example, if the World Cup on judo is held, then the sports construction has to meet completely requirements of the international federation of judo since material support of a sports construction and finishing with information mobility and security guarantees, both athletes, and fans. For holding regional competitions of so strict requirements it isn't provided. As a rule, are limited to the minimum requirements allowing to carry out all necessary competitive actions provided by rules of competitions.

The competitions concerning the championships and World Cups, the championships and cups of Asia (including Asian and Central Asian games) and the international tournaments, devoted to outstanding athletes, figures of sport and milestone events have been carried to the status of the international competitions.

Sports contests, the championships and the championships of the Republic, cups of Kazakhstan and tournaments of republican level have been carried to the status of republican competitions.

The status of regional competitions had included the championships of the area, the city (including Almaty) and regional (including rural) competitions.

The analysis in different types of sport of conditions of competitions, degree of the organization and management has allowed us to allocate with them the most significant organizational and administrative factors most of which promote high quality of management of competitions.

The most significant factors were among:

1. Experience of competitions;
2. Existence or absence of judges of the international category;
3. Importance of advertizing;
4. Advertizing existence;
5. Financial conditions of competitions;
6. Conditions of viewing of competitions by the audience and fans;
7. Culture of behavior of the audience;
8. Observance by organizers of the requirements for competitions provided by rules and sanitary and hygienic norms;
9. Control of behavior of the audience and fans;

10. Participation in competitions of the famous athletes;
11. Safety of competitions;
12. Accounting of a rank of competitions;
13. Existence of prizes;
14. Preliminary information on competitions terms;
15. Medical support of competitive activity.

On the basis of the allocated factors test statements which have allowed us to develop the questionnaire which ultimate goal was the comprehensive and standardized assessment of quality of competitions carried out in the territory of the Republic of Kazakhstan have been made.

Conclusions. On the basis of generalization of results of the real pilot study it is possible to draw the following conclusions.

1. It is proved that in the course of management of sporting events the most significant and least significant points defining their quality for various rank of competitions depending on specifics of concrete sports are selected:

a) when holding the international competitions held in the territory of the Republic of Kazakhstan organizers it is greatest significance attach to such points as: safety, existence of prizes (prize fund) and participation of the famous athletes; organizers pay the smallest attention to questions of level and quality of control of behavior of the audience and fans, advertizing of competitions to quality of financing;

б) when holding republican competitions organizers it is greatest significance attach to the next moments: to existence of prizes (prize fund), preliminary informing interested persons and fans on terms competitions and culture of behavior of the audience of comers on competitions; the smallest concern of organizers is caused by advertizing of republican competitions, shortage of organizing experience for their carrying out and quality of conditions of viewing; financings;

в) in the course of the organization and management of regional competitions the next moments are most of all important for the carrying-out organizations: medical support of competitions, preliminary information on terms of holding a sporting event and observance of all requirements for their carrying out.

2. The comparative analysis of quality of competitions of various rank in the edinoborstvvakh, sports and individual sports by means of criterion of distinction of Fischer has shown that the international competitions take place in all three groups approximately at one level. When holding republican competitions by the best organization individual sports differ ($F_{\phi} = 1,48 > F_{st} = 1,45$; $P < 0,05$), and when holding regional competitions the best organization is shown by single combats in comparison with sports ($F_{\phi} = 1,27 > F_{st} = 1,22$; $P < 0,05$) and individual sports ($F_{\phi} = 1,25 > F_{st} = 1,22$; $P < 0,05$).

LIST OF REFERENCES

- 1 *Степанова, О.Н.* Маркетинговая деятельность спортивно-оздоровительных клубов / О.Н. Степанова // Маркетинг. – 2010. – № 5. – С. 63-72.
- 2 *Шакиров, Л.Р.* Модель управления физкультурно-спортивными молодежными субкультурами/ Л.Р. Шакиров, Г.Н. Голубева// Проблемы и инновации спортивного менеджмента, рекреации и спортивно-оздоровительного туризма: материалы II-й Всероссийской научно-практической конференции (Казань, 6 июня 2016 г.) / под ред. проф. Г.Н. Голубевой. – Казань: Поволжская ГАФКСиТ, 2016. – С.299-301.
- 3 *Кулбаев А.Т.* Спорт түрлері бойынша жарыс өкізу дайындығын ұйымдастыру және басқару негіздері: Философия докторы ғылыми дәрежесін алу үшін дайындалған диссертация. – Алматы: ҚазСТА, 2014. – 162 б.

THE ANALYSIS OF THE IMPORTANCE OF POSSESSION AT THE LEVEL OF THE TEAMS IN PLAY-OUT AND PLAY-OFF

*Pătrașcu Cătălin, Oprea Ion, Furnică Alexandru, Tudor Marius
National University of Physical Education and Sports*

Bucharest, Romania

e-mail: patrascucatalinc@yahoo.com

Coordinator: Conf. Univ. Dr. Grigore Gheorghe

Key words: football, analysis, importance, possession, performance.

Abstract

Through the research we want to analyze the importance of the game of possession at the level of the football game of performance in Romania through the teams who are components of the Liga I in the play-out and play-off.

In this sense we propose to analyze in detail the correlation between the possession of the ball and shots on target through the tactical actions of attack during a game of 90 minutes.

The final objective that we want to archive is to obtain is to data related to bigger opportunities to score, opportunities based on a good possession of the ball.

At the same time we want to emphasize the actuality of the possession game in the Romanian football at the level of making performance. In this way, we want our results to represent the parameters of a model which can improve the football training.

Introduction

The reason for choosing this theme

Involved in this phenomenon of football, we want to emphasize the impact of the possession game but also the way that possession influences the result of a football game, at the level of some teams in play-off and play-out from league 1 in Romania.

In this paperwork we will study the possession as collective tactical action, but also the main methods and ways to keep the ball, and the ratio of the opportunities created and possession.

Purpose and objectives proposed

The purpose of this paperwork is to analyse the relationship between the ocasions and the shots in the gate created by the possession game. This study will show us if a team with a greater possession has more opportunities to score and the way that possession can influence the result of a game played by the teams in play off or play. In order to achieve what we have proposed, we have established the following objectives:

- ✓ Ordering specialized literature
- ✓ Elaboration of recording files that contain information about possession in registred matches
- ✓ Collection of data from the registration files
- ✓ Processing and interpretation of data obtained

Theoretical-methodological foundation of the work

Description of the action of collective tactical attack – pass

The pass is the most important component for organizing and carrying out the attack. The pass is the simplest action of collective tactical attack, and is the most common in the game. In order to accomplish the pass, the presence of the teammate, his speed and direction of motion, specifics of collective action registered in tactical phase, form, and game system, the placement and number of opponents.

Classification of passes:

- By distance.
- By direction.
- By trajectory.
- By teammate's location.

Description of the action tactical individual of attack – demarcation

Demarcation is the action that the player in attack performs to get rid of the mark of the opponent and to occupy a position in which he can act more freely. Demarcation is direct or indirect. Direct demarcation is an active form of action of the opponent, determined by his will to detach the opponent.

Indirect demarcation is done without the will of the striker, due to the successful actions of nearby strikers, who pull the defender who marked the teammate.

Presentation, Processing and Interpretation of data

2.1 Research methods used

In order for this paper, we have used a series of research methods:

- method of observation - this method I made observations on official matches played in the play-off and play-out of the championship
- method of recording - following a series of official games, we made 30 record notes
 - 12 record notes for official games in the play off and play out of the league 1 Romania;
 - 12 official game record notes in the play-off and play out of the league 1 Romania.
- Statistical-mathematical method - we have made calculations such as arithmetic mean
- ✓ method of graphic -we performed a series of graphical representations in order to obtain a more objective image of the results obtained from the research.

2.2 Presentation of data

In the presentation of the paper we made the following registration cards to the matches of the football teams in league 1 in play off and play out.

Teams	Viitorul (Play Off-I)	Medias (Play Out-I)
Possesion	51,3%	54,4%
Opportunities for goal	51	61

Table 1. The number of occasions created by teams in play off and play out.

Teams	FCSB (Play Off-II)	Botosani (Play Out-II)
Possesion	50,5%	58,8%
Opportunities for goal	52	55

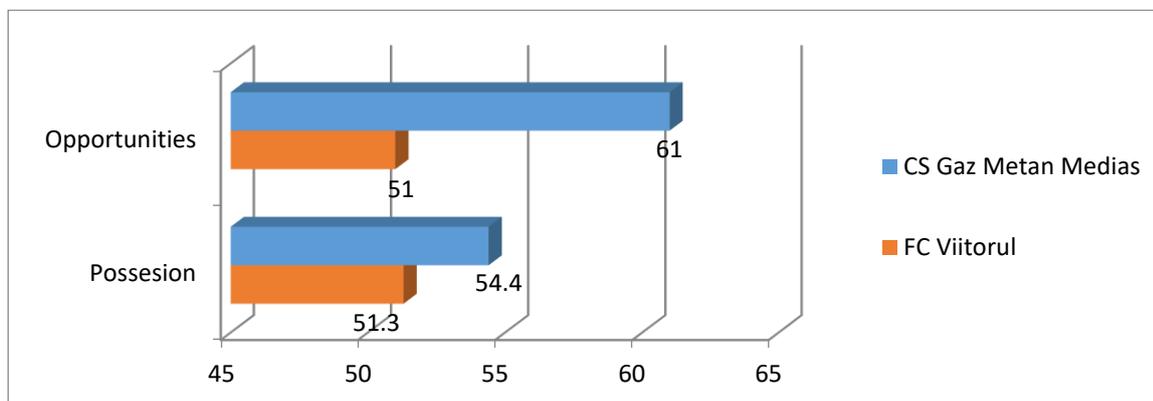
Table 2. The number of occasions created by teams in play off and play out.

Teams	Astra (Play Off-III)	Voluntari (Play Aut-III)
-------	----------------------	--------------------------

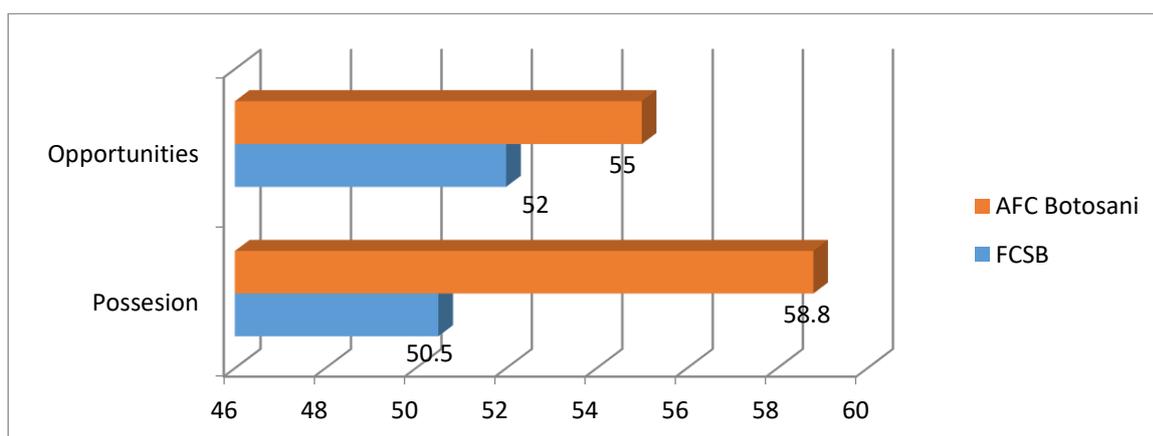
Possesion	50,8%	45,2%
Opportunities for goal	58	48

Table 3. The number of ocasions created by teams in play off and play aut.

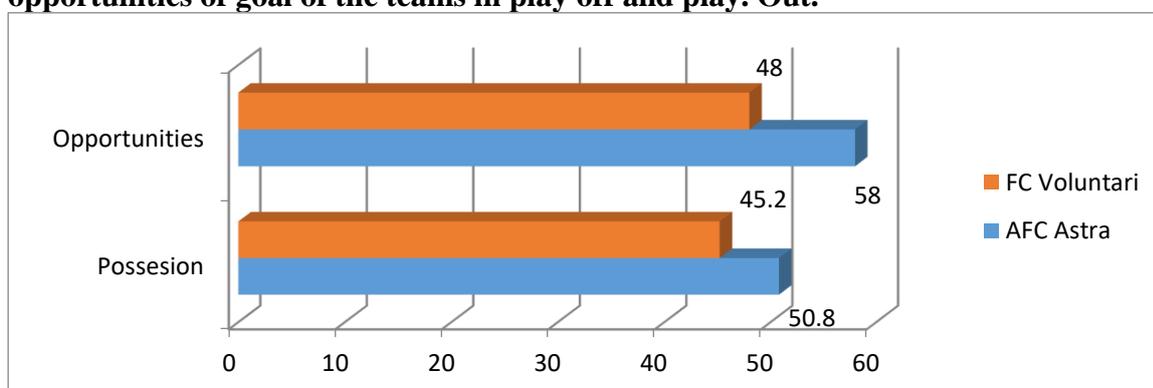
2.3 Processing of data



Graphic No. 1 This chart compares the percentage of possession in relation to the opportunities of goal of the teams in play off and play. Out.



Graphic No. 2 This chart compares the percentage of possession in relation to the opportunities of goal of the teams in play off and play. Out.



Graphic No. 3 This chart compares the percentage of possession in relation to the opportunities of goal of the teams in play off and play. Out.

2.4 Interpretation of data

In the graphics above we can observe that the ratio of possession and the number of opportunities created differs depending on the place occupied and the objective. We can observe that in the case of first-place teams from play off and from play out the ratio possession - goal occasions is slightly above average. We observe that in the case of first-place team in play out the ratio possession - goal occasions is bigger than first-place team in play off because of the lack of pressure, but also because of the value level in play off..

This difference can be seen most clearly in the case of place 3 in play off and play out. If in the case of the team in 3rd place in play off who does not have a specific purpose and are not under pressure of the team game results is quite good, looking at the ratio possession- goal occasions. For the team in 3rd place in play out, which lies at the limit of downgrade, the ratio possession-goal occasions is the lowest of all the teams under observations. We consider that the factor who influences the most this ratio is the downgrade (league 2), next to achieving the objective and also the field matters in order to achieve a good possession, leading to the creation of more goal occasions.

Conclusions

Following the study we can express the following conclusions:

The teams that occupy the position I and II in the league table of the relegation (Play Out) the lack of purpose and the idea of rescue to relegation into the inferior league allowed them to play with lesser pressure and a little extra lightness which led the teams to do a more offensive game with a bigger possession and more opportunities for the goal compared to the teams on the same place in the winning league table of title (Play Off) where here teams has more pressure and the stake of winning the title what makes the team to reducing the possession of the ball and also the opportunity to enroll.

References:

1. Grigore, Gh., 2008, *Selecția la Copii și Juniori*, Editura Moroșan, București
2. Ciolca, S.M., 2008, *Fotbal – Curs de Aprofundare*, București, Academia Națională de Educație Fizică și Sport.
3. Cojocaru Viorel, 2000, *Strategia Pregatirii Juniorilor pentru Fotbalul de Inalta Performanta*, Bucuresti

PECULIARITIES OF FORMATION AND DEVELOPMENT OF THE NETWORK OF SUBSIDIARY SCHOOLS-BOARDERS IN SPECIFIC CONDITIONS OF THE REPUBLIC OF TAJIKISTAN

*Karimova D.D., Bakhodurova Oimkhon Zafarovna
Tajik Institute of Physical Culture named after S. Rakhimov
e-mail: saidova-60@mail.ru*

The article explores the peculiarities of the formation and development of the network of auxiliary boarding schools in specific conditions, as well as the problems of the physical development and preparedness of students in general education schools.

Key words: physical education, auxiliary boarding schools, active motor activity, efficiency, component.

Введение. В русле демократических перемен, провозглашенных Конституцией Республики Таджикистан, происходят существенные изменения во всех сферах жизнедеятельности общества: экономике, политике, культуре. Естественно, что они не могли не коснуться и системы образования, в том числе и вспомогательных школ-интернатов, в которых обучаются дети с отклонениями в состоянии здоровья.

Обретая независимость, Республика Таджикистан вырабатывает свою политику в области образования, определяет приоритетные задачи в этом направлении. Жизнь показала, что игнорирование основ образования, в том числе физического воспитания и многовековой мудрости выдающихся таджикско-персидских мыслителей Ибн Сино, Саади Шерози, А. Джамии, А. Фирдоуси, основоположника научной педагогики в России

К.Д.Ушинского, основоположника научной мысли по физическому воспитанию П.Ф.Лесгафта, основоположников советской педагогики Н.К.Крупской, А.С.Макаренко, В.А.Сухомлинского и др. ни к чему хорошему не приведёт. (68,69; 156; 54; 192; 186; 90; 86, 98; 170).

Закон Республики Таджикистан «Об образовании» (1994г.) провозгласил образование стратегического законодательного акта в сфере деятельности государства. (65, с.54).

Принят государственный стандарт образования Республики Таджикистан.

С 15 мая 1997 года введен Закон Республики Таджикистан «О физической культуре и спорте», в котором отмечается, что этот Закон \ направлен на реализацию конституционных прав граждан в области физической культуры и спорта.

В связи с принятием этих важных государственных документов об образовании произошли существенные изменения в содержании обучения, ' физического воспитания учащихся всех типов школ, в том числе и во вспомогательных школах-интернатах.

Неразработанность данной проблемы вызвала необходимость разработать тему, посвященную вопросам физического воспитания умственно отсталых детей.

На современном этапе развития демократического общества большое значение в республике приобретает вопрос совершенствования организационно-оздоровительных форм, средств и методов обучения детей всех возрастов и пола здоровьесберегающим, жизнеобеспечивающим, активным двигательным действиям в процессе учебно-воспитательной и внеклассной работы. Вместе с тем следует отметить отсутствие обоснованной методики по данной проблеме. Актуальность данной проблемы обосновывается государственными документами.

Аналитический обзор литературных источников по работе вспомогательных школ-интернатов в двигательном круглосуточном режиме, свидетельствует об отсутствии необходимой литературы по этому вопросу.

Различные исследователи давно занимаются проблемами выявления различных особенностей, влияющих на аномальность, инвалидность, а также физическое развитие и физическую подготовленность.

Физическое развитие детей с нарушениями интеллекта исследовали Плещаков А.Н., Самыличев А.С., Дмитриев А.А. и др. Они отметили, что умственно отсталые школьники отстают от нормально развивающихся сверстников, хотя некоторые из них могут превосходить средние данные учащихся массовых школ.

При проведении исследования мы столкнулись с тем, что данная проблема в Таджикистане ни кем не разрабатывалась.

Проблему физического развития и подготовленности учащихся общеобразовательных школ рассматривали в своих исследованиях ряд авторов. Они уверены, что, осуществляя педагогический поиск и применяя совершенные и эффективные формы и методы работы, они все-таки внесут коррективы в нормирование учебной и физической нагрузки разной мощности, усовершенствуют систему физического воспитания и создадут условия, обеспечивающие удовлетворение биологической потребности детей в движении.

Отдельные исследователи рассмотрели гигиеническую характеристику двигательного режима учащихся младших классов.

Ближе к нашей проблеме большое значение имеет исследование Анаркулова Х.Ф. «Пути повышения эффективности физического воспитания на основе региональных факторов и народных подвижных игр», Губановой Л.А. «Педагогические основы организации и проведения комплексных физкультурно-оздоровительных и спортивно-массовых мероприятий в группе продленного дня», Бобовской Т.Н. «Исследования народных физических упражнений в учебной работе по физическому воспитанию в школе» и другие. (6; 45; 20; 97; 208; 209; 153; 167; 126; 176; 16; 17; 18; 19; 60, 61; 35; 200; 85). Авторы отмечают, что в двигательном режиме учебно-воспитательного процесса существуют объективные возможности для организации и проведения комплексных физкультурно-оздоровительных компонентов, роль которых заключается в адаптивном снятии умственной напряженности во время учебного процесса и самоподготовки.

В целях усиления эффективности воспитательного процесса вспомогательных школ-интернатов, где обучаются дети с недостатками в физическом и умственном развитии Изотовой В.С., Одинаевой Л.А., Кадыровой Г.К. проводилась определенная работа с данным контингентом.

Анализ опубликованных работ и диссертационных исследований по данной проблеме Севатеевой Л.А., Фатеевой Л.П., Молова М.Н., Козленко Н.А., Сыромолотова Ю.С., Певзнера М.С. и других показал, что в их трудах дано теоретическое обоснование значения учебно-воспитательной и физкультурно-оздоровительной деятельности. Их труды оказывают большую методическую помощь учителям физкультуры и воспитателям.

Вместе с тем, в Республике Таджикистан отсутствуют необходимые стандарты по физическому развитию и подготовленности для умственно отсталых детей вспомогательных школ-интернатов. По мнению большинства ученых-исследователей национальные народные игры пользуются популярностью у детей разных возрастов и пола во всех типах школ, независимо от развития и состояния здоровья.

Определенная часть исследователей считают, что прогрессивные национальные традиции являются важным условием и эффективным средством преемственности поколений.

В своей работе «Ребёнок с отклонениями в развитии» Мастюкова Б.М. отмечает, что на воспитание личности с ограниченными функциональными возможностями оказывает влияние среда обитания: семья, учителя и наставники, психологи, друзья, природа, искусство, образование. (100, с.20). Исследователи отмечают, что дети с отставанием в развитии двигательной функции также могут правильно выполнять бег, метание, прыжки, участвовать в различных играх и поединках оздоровительного характера, походах, экскурсиях, прогулках и др.

По нашему мнению педагогический контроль за уровнем физической подготовленности учащихся должен быть направлен на удовлетворение естественной двигательной потребности растущего организма. Он должен способствовать развитию высокой работоспособности в различных условиях труда. К сожалению, в учебно-воспитательном процессе вспомогательных школ-интернатов отсутствует программа, требования, методические рекомендации, разработки, пособия и учебники по организации и проведению уроков физкультуры, физкультурно-оздоровительных и спортивно-массовых мероприятий.

Термины «Физкультурно-оздоровительный компонент», «Физическое воспитание» и «Адаптивное физическое воспитание» до сегодняшнего дня не имеют точного определения и правильного понимания применительно к режиму учебно-воспитательного процесса вспомогательной школы-интерната с умственно отсталыми детьми. Такое положение затрудняет рациональное использование многочисленных рекомендаций специалистов по улучшению педагогической работы во вспомогательных школах интернатах нашей республики.

В трудах отдельных ученых рассмотрены психолого-педагогические подходы к детям, взаимодействие, формы и методы организации и проведения двигательной деятельности детей в условиях вспомогательной школы. Но авторами недостаточно показана взаимосвязь и взаимозависимость одного двигательного процесса от другого, а также недостаточно полно раскрыты особенности адаптации детского организма и различного рода двигательных действий в круглосуточном режиме вспомогательной школы-интерната, не раскрыты контакты между учителем, воспитателем и учеником в процессе их общения в двигательной деятельности, в играх.

Сравнительный анализ работ названных ученых и других публикаций показал, что проблеме физического воспитания как основному физкультурно-оздоровительному компоненту принадлежит важная роль в адаптивном (реабилитационном) совершенствовании детей вспомогательной школы-интерната, в которой обучаются умственно отсталые дети.

Кроме того, несмотря на значительное число опубликованных работ по указанной тематике, на наш взгляд, данная проблема всё ещё остается до конца нерешённой.

Ознакомление с многочисленной литературой по данной проблеме ещё раз доказывает что, у нас в республике отсутствует литература по физическому воспитанию умственно отсталых детей вспомогательных школ-интернатов, классов и индивидуальных групп.

Таким образом, внедряемый нами физкультурно-оздоровительный компонент во вспомогательные школы-интернаты будет способствовать повышению эффективности физического воспитания в целом, так как он является важной государственной задачей, от решения которой, в конечном счете, зависит готовность будущих выпускников к труду и дальнейшей жизнедеятельности.

Объектом исследования явились умственно отсталые дети I-IV классов городских вспомогательных школ-интернатов Республики Таджикистан и педагогическая деятельность учителей общеобразовательных предметов, учителей физкультуры и воспитателей в круглосуточном режиме учебно-воспитательного процесса.

Предметом исследования явилась круглосуточная активная двигательная деятельность младших школьников I-IV классов и формирование у них объективных знаний и представлений здоровом образе жизни средствами адаптивного физического воспитания.

Исследования является предположительное суждение, что физическое воспитание умственно отсталых детей осуществляется успешнее при условии:

- если их обучение определяется государственной региональной учебной программой по физическому воспитанию на рациональном уровне с учётом введения в неё национальных форм, средств и методов;

- если уроки и физкультурно-оздоровительные, адаптивные и коррекционные мероприятия, а также внеклассные оздоровительные и специальные занятия гармонично направляются на оздоровление детей;

- если в круглосуточном режиме вспомогательной школы-интерната, а также в каникулярное время предлагаются и рационально используются адаптивные упражнения и задания, которые обеспечивают организму детей эффективную двигательную активность и компенсацию основного и вторичного дефекта;

- если при проведении различных показательных физкультурно-оздоровительных и спортивно-массовых мероприятий в режиме школы- интерната, а также за её пределами возникает эмоциональный подъём духовных и физических сил, обеспечивается дозволенная активная двигательная деятельность детей, которая будет всемерно содействовать их нормальному психическому, физическому развитию и двигательной подготовке, укреплению здоровья, развитию умственных способностей, положительно влиять на учёбу, на приобщение к здоровому образу жизни, дальнейшую жизнедеятельность и др.

Целью исследования послужил поиск путей повышения эффективности физкультурно-оздоровительного компонента на основе учёта региональных факторов и введения в него адаптивных физических, коррекционных упражнений и игр с целью массового охвата умственно отсталых детей, обучающихся и воспитывающихся круглосуточно под контролем педагогических и медицинских работников вспомогательных школ-интернатов.

В соответствии с гипотезой и целью исследования определены его задачи.

1. Выявить особенности постановки физического воспитания в различные периоды развития вспомогательных школ-интернатов.

2. Изучить современное состояние учебной и внеклассной физкультурно-оздоровительной и спортивно-массовой работы с воспитанниками.

3. Определить уровень и динамику основных показателей физического развития и физической подготовленности и разработать возрастные ориентиры.

4. Обосновать основные педагогические требования в круглосуточном режиме в учебно-воспитательном процессе.

5. Определить пути совершенствования двигательного адаптивного физкультурно-оздоровительного компонента с учётом региональных факторов и специфики работы вспомогательных школ-интернатов.

6. Разработать научно обоснованные рекомендации по дальнейшему совершенствованию учебной, физкультурно-оздоровительной и спортивно- массовой работы как главному компоненту в круглосуточном режиме вспомогательной школы-

интерната.

Литература

1. Адаптация организма в высокой температурной среде //Под общей ред. З.Т.Турсунова.- Ташкент: ФАН, 1988.-184с.

2. Старостина, А. В. Физическая культура - средство самооздоровления детей / М. В. Канин, В. Ю. Кисельников // Физическая культура в школе. – 2008. - № 5. - С. 28.

3. Теория и методика физической культуры: Учебник / Под ред. проф. Ю. Ф. Курамшина. – М.: Советский спорт, 2003.- 464 с.

4. Теория и методика физической культуры : учебник / Под ред.проф. Ю. Ф. Курамшина. – Изд. 2-е, испр. - М. : Советский спорт, 2004. – 464 с.

5. Теория и организация адаптивной физической культуры : учебник. – Т. 1. / Под ред. проф. С. П. Евсеева. – М.: Советский спорт, 2005. – 296 с.

6. Теория и организация адаптивной физической культуры: учебник. – Т. 2. / Под ред. проф. С. П. Евсеева. – М.: Советский спорт, 2005. – 448 с.

КОНТРОЛЬ ЗА ТЕХНИЧЕСКОЙ ПОДГОТОВКОЙ ДЗЮДОИСТОК В УСЛОВИЯХ СОРЕВНОВАНИЙ.

*Альмуханбетова Г.Н., Джамбербаев Б.О., Конакбаев Б.М.
Казахская академия спорта и туризма
The Kazakh Academy of Sport and Tourism (KazAST)
Алматы, Казахстан
e-mail: bahytbek.k@mail.ru*

Abstract: Authors carried out the all-round analysis of the estimated receptions of participants of Judo Championship of the Republic of Kazakhstan, defined groups of receptions from which the judge estimated actions more often, revealed the most effective receptions on quality of estimates of judges, conducted generalization on variety of the estimated receptions and their quality in each weight category.

By the results of comparative characteristics of technical training of men and women, practical recommendations for further enhancement of the attacking, protective and counterattacking actions in a standing techniques and in techniques on the ground are developed.

Keywords: quantity of estimates, receptions, weight category, quality of estimates, recommendations.

Актуальность. В условиях соревновательной борьбы дзюдоистки максимально мобилизуются и проводят технико-тактические действия при противоборстве соперниц на пределе своих возможностей. Получение объективной и всесторонней информации в процессе соревнований дает возможность оценить современные тенденции и направления технической подготовки в дзюдо, в связи с регулярными изменениями правил соревнований.

Обобщение и всесторонний анализ технической подготовки по результатам соревнования позволяет разработать и рекомендовать к внедрению конкретные предложения по совершенствованию учебно-тренировочного процесса с целью повышения эффективности выполнения приемов в атаке и защите.

Цель исследования: дать оценку технической подготовленности участниц Чемпионата Республики Казахстан по дзюдо.

Задачи исследования:

- зарегистрировать соревновательные встречи на видеокамеры;
- внести в протоколы и таблицы оцененные действия участниц с учетом весовых категорий и проанализировать техническую подготовленность;
- провести сравнительный анализ технической подготовленности мужчин и женщин;
- разработать практические рекомендации для совершенствования техники борьбы.

Результаты исследования. Чемпионат Республики Казахстан по дзюдо был проведен 15-19 ноября 2016 года в г. Кызылорде. В соревнования приняли участие 142 женщины и 260 мужчин. Распределение участниц по весовым категориям отражено на рисунке 1. Следует отметить, что количество участниц во многих категориях увеличилось, этому способствует рост популярности дзюдо, особенно после успешного выступления на Олимпийских играх 2016 года в Рио-де-Жанейро.

Видеозаписи соревновательных встреч проводились тремя видеокамерами. Было заснято 154 встречи соревнований женщин.

По окончании Чемпионата были просмотрены и проанализированы все встречи и в таблицу 1 были внесены данные о количестве различных результативных приемов, проведенных в семи весовых категориях у женщин.

Всего зарегистрировано 168 оценок за технические действия в соревновательных поединках дзюдоисток.

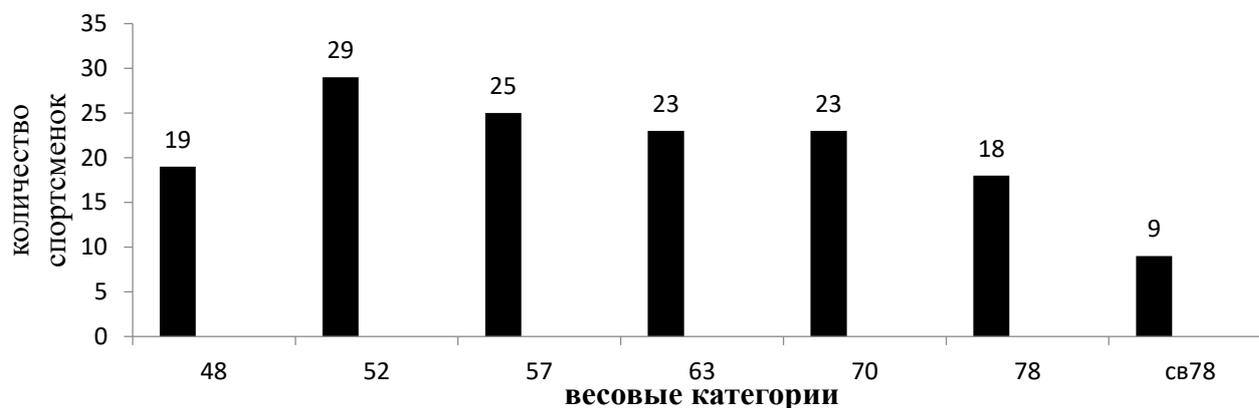


Рисунок 1 - Распределение спортсменок по весовым категориям в соревнованиях женщин.

Анализ количества оценок за различные приёмы по весовым категориям у женщин показал, что наибольшее количество раз были оценены судьями: удержания 38 раз, бросок через спину с колен 18 раз, бросок выведение из равновесия 17 раз, бросок зацепом голенью 16 раз, подхватом под одну ногу 12 раз, бросок задняя подножка и подсечка по 11 раз, бросок через бедро 9 раз, удушающий приём 8 раз, подхват под две ноги 6 раз, броски через спину и броски через голову с упором голенью по 5 раз (таблица 1).

Таблица 1 - Количество оцененных технических действий по весовым категориям у женщин.

№	Техническое действие	Количество оценок							Всего	Всего муж
		Весовая категория (женщины)								
		48	52	57	63	70	78	+78		
1	Бросок через бедро	-	2	1	3	-	3	-	9	21
2	Бросок через спину	-	-	-	2	2	-	1	5	2
3	Бросок через спину с колен	3	5	1	1	6	1	1	18	65
4	Бросок передняя подножка	-	-	-	-	-	-	1	1	7
5	Бросок задняя подножка	1	1	1	2	4	1	1	11	28
6	Бросок подсечкой	1	1	-	1	5	2	1	11	31
7	Бросок зацепом стопой	-	-	-	1	-	-	-	1	2
8	Бросок зацепом голенью	-	4	4	4	3	1	-	16	24
9	Бросок подхват под одну ноги	2	4	3	1	2	-	-	12	31
10	Бросок подхват под две ноги	-	2	1	1	2	-	-	6	10
11	Бросок прогибом	-	-	-	-	2	1	-	3	4
12	Бросок через голову с упором стопой	-	-	-	-	-	-	-	-	-
13	Бросок через голову с упором голенью	-	1	1	3	-	-	-	5	13
14	Бросок выведения из равновесия	3	4	2	3	2	3	-	17	39
15	Бросок подсадом	-	2	-	-	-	-	-	2	28
16	Болевой прием	2	1	-	-	2	-	-	5	10
17	Удушающий прием	1	1	4	-	2	-	-	8	5
18	Удержания	4	4	6	5	7	8	4	38	40
Всего		17	32	24	27	39	20	9	168	360
Примечание: жирным шрифтом отмечены приемы, проводимые в партере										

В отличие от мужчин у женщин гораздо большее количество приёмов оценивается в партере 51 раз из 168, а удержание оценивалось наибольшее количество раз - 38. Количество оцененных технических действий в стойке и в партере по весовым категориям у женщин представлены на рисунке 2.

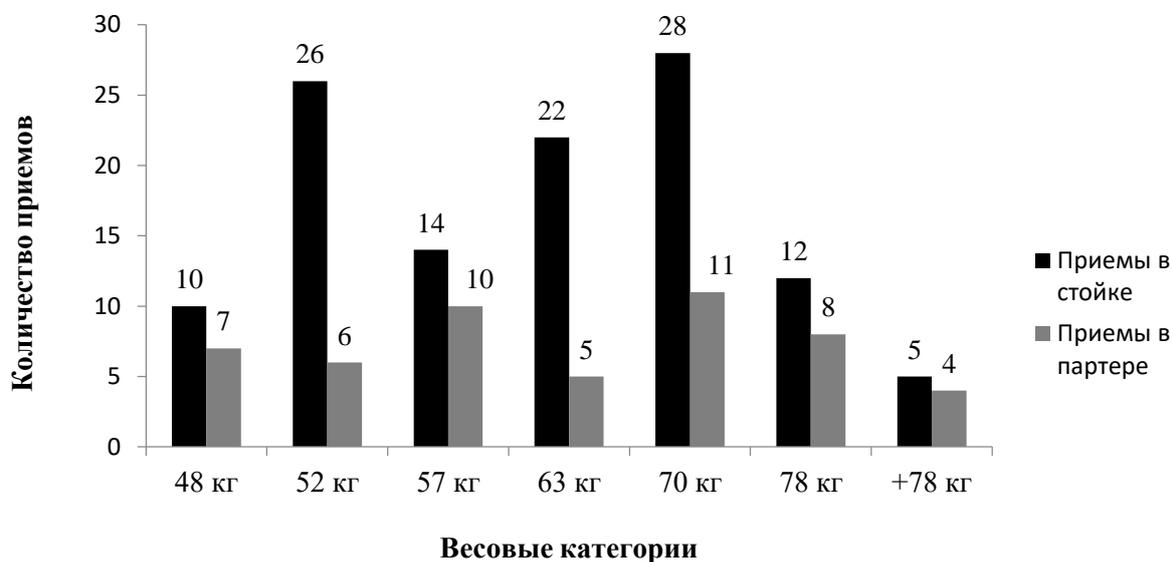


Рисунок 2 - Распределение оцененных технических действий в стойке и в партере у женщин.

Сравнивая соотношение количества оценок в стойке и в партере у мужчин и женщин, мы получили следующие результаты. У мужчин в стойке было оценено 309 приёмов, что составило 85%, а в партере 55 приёмов или 15% от общего количества оценок. У женщин всего оценено 168 приёмов, из них в стойке 117 (70%), а в партере 51 приём, что составляет 30% от общего количества. Можно сделать вывод о том, что защитные действия от приёмов в борьбе лежа у женщин менее совершенны, чем у мужчин и это при условии, что конкуренция в Чемпионате Республики Казахстан во многих весовых категориях довольно слабая, по сравнению с международными соревнованиями.

В стойке у женщин, также как и у мужчин наиболее часто оценивались следующие приёмы: бросок через спину с колен (65 раз у мужчин и 18 раз у женщин), выведение из равновесия (39 раз у мужчин и 17 раз у женщин), далее у женщин по количеству оценок бросок зацепом голенью (16 раз), а у мужчин подсечка и подхват под одну ногу (31 раз). На четвертом и пятом месте у женщин задняя подножка и подсечка (по 11 раз), на шестом бросок через бедро (9 раз) (таблица 2). Практически, по частоте применения у мужчин и женщин, приёмы в стойке расположились в одинаковой последовательности, что позволяет нам сделать выводы о едином планировании тренировочного процесса для мужчин и женщин.

Анализируя качество оценок по весовым категориям, мы отмечаем, что наибольшее количество “иппонов” получили спортсменки в весовых категориях до 70 кг 19 из 39 оценок, до 48 кг 11 из 17 оценок, +78 кг 6 из 9 оценок, до 78 кг 8 из 20 оценок, до 57 кг 9 из 24 оценок. На “вазари” чаще оценивались приемы в весовой категории до 63 кг 14 из 27 оценок. “Юко” присуждалось чаще в весовых категориях до 52 кг 16 из 32 оценок, до 57 кг 10 из 24 оценок, до 78 кг 8 из 20 оценок.

Обобщая вышеизложенное нами сделан вывод о том, что самые качественные оценки (“иппон” и “вазари”) проводили дзюдоистки в весовых категориях до 48 кг 14 из 17 оценок, +78 кг 8 из 9 оценок, до 63 кг 21 из 27 оценок, до 70 кг 17 из 39 оценок и до 57 кг 14 из 24 оценок.

Таблица 2 - Качество оценок технических действий различных приемов у женщин.

Оценка	Техническое действие																	Ит ог о
	стойка													партер				
	Бросок через Бросок через Бросок через спину с Бросок Бросок задняя Бросок подсечкой Бросок Бросок зацепом Бросок ПОДХВАТ ПОД Бросок Бросок Бросок через голову Бросок выведение Бросок Болевой Удушающие Удержание																	
	4	3	5	-	3	2	-	4	3	1	-	-	7	1	5	8	23	69
В	1	2	4	1	3	3	-	2	5	3	2	1	4	1	-	-	11	43
Ю	4	-	9	-	5	6	1	10	4	2	1	4	6	-	-	-	4	56
В	9	5	18	1	11	11	1	16	12	6	3	5	17	2	5	8	38	168

Примечание: жирным шрифтом отмечены приемы, проводимые в партере

Качество оценок по весовым категориям у женщин представлены по весовым категориям в таблице 3. Количество оценок "иппон" составило 69 (41%), "вазари" - 43 (26%), "юко" - 56 (33%).

Наибольшим количеством оценок "иппон" судьями отмечены удержания - 23 раза, удушающие - 8 раз, бросок выведение из равновесия - 7 раз, бросок через спину с колен - 5 раз, бросок через бедро и зацепом голенью по 7 раз.

"Вазари" присуждались за удержания - 11 раз, броски подхватом - 5 раз, по 4 раза, за броски через спину с колен и броски через голову с упором голенью.

Оценка "юко" присуждалась 10 раз за бросок зацепом голенью, 9 раз за бросок через спину с колен, по 6 раз за бросок подсечкой и бросок выведение из равновесия, 5 раз за бросок задняя подножка.

Анализируя, качество выполнения бросков мы определили что, наиболее эффективными приёмами у женщин являются бросок через спину, бросок подхватом под одну ногу, бросок выведение из равновесия, но самым эффективным является удержание 23 "иппона" из 38.

Таблица 3 - Качество оценок за технические действия по весовым категориям у женщин.

Оценка судей	Весовая категория (кг)							
	48	52	57	63	70	78	+78	Итого
Иппон	11	9	9	7	19	8	6	69
Вазари	3	7	5	14	8	4	2	43
Юко	3	16	10	6	12	8	1	56
Итого:	17	32	24	27	39	20	9	168

Выводы и практически рекомендации.

1. В Чемпионате Республики Казахстан по дзюдо приняли участие 402 спортсмена, 260 мужчин и 142 женщины, были зарегистрированы оцененные технические действия в 419 встречах, из них 154 у женщин и 265 у мужчин.

2. В соревнованиях женщин чаще оценивались: удержания – 38 раз, бросок через спину с колен – 18 раз, бросок выведение из равновесия – 17 раз, бросок зацепом голенью – 16 раз, бросок подхватом – 12 раз, броски задняя подножка и подсечка по 11 раз. По качеству технических действий наивысшие оценки получили дзюдоистки весовых категорий до 70 кг – 19 из 39 оценок, до 48 кг 11 из 17 оценок, свыше 78 кг 6 из 9 оценок.

3. Сравнительный анализ технической подготовленности мужчин и женщин показал, что у женщин в стойке оценено 117 приемов (70%), в партере 51 (30%), а у мужчин в стойке 309 приемов (85%), а в партере 55 (15%), следовательно защита от приемов в партере у женщин менее совершенно. Показатели частоты применения различных групп приемов практически одинаковые у женщин и мужчин, что является подтверждением применения единой тренировочной программы для спортсменов разного пола.

4. По результатам анализа технической подготовленности участниц Чемпионата РК среди женщин нами разработаны следующие рекомендации:

-уделить больше внимания совершенствованию защитных действий от приёмов в борьбе лежа: удержаний (38 оценок), удушающих приемов (8 раз), болевых приемов (5 раз);

-в стойке совершенствовать защиту от приёмов: бросок через спину с колен (18 оценок), бросок выведение из равновесия (17 оценок), бросок зацепом голенью (16 оценок), бросок подхватом под одну ногу (12 оценок), бросок задняя подножка и подсечка (по 11 оценок):

- совершенствовать качество выполнения атакующих приемов: бросок зацепом голенью, бросок через голову с упором голенью, бросок подсечкой, бросок задняя подножка, бросок через спину с колен.

Литература.

- 1 Чумаков Е.М., Волков В.П., Роднов В.С. Анализ технического мастерства самбистов // Спортивная борьба: Ежегодник. – 1971. – С. 45-53.
- 2 Свищев И.Д. Анализ технико-тактических действий сильнейших дзюдоистов мира в соревновательной деятельности // Спортивная борьба: Ежегодник. – М.: ФиС, 1981. – С. -11.
- 3 Шепетюк М.Н., Андрущишин И.Ф., Шепетюк Н.М. Анализ технико-тактической подготовки дзюдоистов // Теория и методика физической культуры.. – 2006. – №1. – С. 188-193.
- 4 Шепетюк М.Н., Альмуханбетова Г.Н., Насиев Е.К., Сайлаубаев Ж.Н., Шепетюк Н.М. Организация контроля за технической подготовленностью дзюдоистов // Теория и методика физической культуры, № 4, 2015, - С. 79-86.
- 5 Шепетюк М.Н., Крушбеков Е.Б., Тен А.В., Альмуханбетова Г.Н. Оценка технической подготовленности дзюдоистов в условиях соревнований// Теория и методика физической культуры, №2, 2016. – С 63-67.
- 6 Шепетюк М.Н. Контроль в спортивной борьбе. – Алматы, МОН РК, КазАСТ, 2001. – 101 с.

Section 2
Kinethoterapy and Varia

REDUCING THE MUSCLE CHAIN HYPERTONY THROUGH MYOFASCIAL TECHNIQUES IN ATHLETES

Antohe Bogdan
“Vasile Alecsandri” University of Bacău
Bacău, România
e-mail: antohe_bogdan@yahoo.com
Coordinator: Rață Marinela¹,

Abstract: It has been talked about the existence of muscle chains since the early 1960s and described in the early 2000s by Myers T. This paper aims to evaluate and treat muscle chains that have scientifically proven anatomical and functional connections in 4 sportsmen, professional athletes (2 boys and 2 girls, with an average age of 21 years). The muscle activity was recorded by using a surface electromyography (Biopac MP36). The values obtained were introduced in tables and analyzed according to the theory of muscle chains to design a treatment scheme based on the myofascial release techniques. The results obtained demonstrate the existence of functional bonds between the evaluated muscle chains and the effectiveness of the myofascial release techniques in their treatment.

Key words: muscle chains, athletics, myofascial.

1. Introduction

The history of muscle chains begins in 1950, when Dr. Kabbat H. laid the foundation for the neuro-proprioceptive facilitation techniques. Shortly afterwards, Struyff D. described the muscle chains in relation to the psychological component of the human posture. In the 1980s, Busquets L., and Chauffour P. followed, the list ending with Myers T., whose book, *Anatomy Trains*, was re-edited for the third time in 2012 (Philipp R., 2009).

From a structural and functional point of view, the muscle chains facilitate the integration of the human body movements into a global concept based on the human biomechanical principles (Myers T., 2009). The concept starts from the idea that the muscles of the human body do not function in isolation, but they are considered part of a tensegrity system, being bound and oriented through the fascia (Budiman M., 2009). The anatomical connections between the muscle chains are made through the connective tissue, especially through the superficial and deep fascia. A fascia is a connective tissue, organized in the form of a three-dimensional matrix, which surrounds, supports, suspends, protects, binds and divides the muscular, skeletal and visceral components of the body (Paolo T., 2012).

Epimysium, perimysium, and endomysium are extensions of the deep fascia and have an anatomic continuity up to the level of superficial fascia. They may extend beyond the limits imposed by the muscle fiber to form tendons and aponeuroses which bind muscle to muscle or muscle to periosteum (Manheim C., 2001).

The link between a muscle and fascia is called ‘myofascial unit’ (Stecco L., 2004). Through the myofascial unit, the muscular force is not transmitted directly from the tendon to the bone, much of it being transmitted to the adjacent structures (synergistic muscles) and, surprisingly, to the antagonistic muscles (Hujing P., 2009).

In time, over 20 muscle chains have been described, some of which are based on anatomical connections, others are based on the authors’ logical deductions. In the present paper, we used 4 muscle chains (the anterior and posterior spiral chain, the anterior and posterior superficial chain) described by Myers T. whose existence has been scientifically demonstrated (Wilke J., et al., 2016).

The myofascial release techniques are a specialization of manual therapy. They require the application of moderate but constant pressure on the connective tissue to reduce muscle tensions and mobility constraints.

The physiological explanation of the myofascial release is based on the viscoelastic properties of the connective tissue which react to a mechanical stimulus by changing the consistency of the fundamental substance and by breaking the transverse bridges between the connective and muscle tissue layers (Maganaris C., 2000).

There is some research that has shown that the muscle chains have the ability to transfer the contraction force through the connective tissue (Huijing P., 2016). The strongest evidence relates to the plantar fascia, triceps surae muscles, hamstring muscles and sacrotuberous ligaments (Frieder K., Et al., 2016).

Given the evidence that the muscle chains exist and the manner in which they have the ability to transmit the contraction forces, we can assume that when the anatomic or functional integrity of a muscle chain is impaired, the repercussions occur not only locally, but across the entire muscular chain.

Knowing all these aspects, we start from the premise that the development of the clinical judgment according to the theory of muscle chains offers a new perspective to the physical therapeutic practice, based on entirety, which can bring many benefits to patients.

2. Material and method

The aim of this paper was to identify the hypotonic muscle chains based on visual, palpation and electromyographic examinations, and in the light of the results obtained, we have developed a personalized, individualized protocol according to the principles of muscle chains.

The research hypothesis is the following: assuming that by applying a therapeutic protocol, based on the myofascial release techniques, a muscle rebalancing will be achieved and at the same time a relaxation of the entire muscle chain with which it is connected.

The research methods used were: the theoretical documentation method, the measurement and evaluation method, the observation method, the graphical method, the data recording method, the case study method.

The research was conducted at the Athletics Hall in Bacău and had 4 subjects, professional athletes, 2 boys and 2 girls, with an average age of 21 years. The treatments were applied for 8 weeks (17.01.2017 - 23.03.2017), 2 times a week, with an average duration of 40 minutes.

Table no. 1 Subjects involved in the experiment

No.	Last name and name	Gender	Age	Affected muscle chaind	Competition period	Existent injuries
1	P.A.	F	23 ani	P.R. spiral chain A.L. spiral chain P. superficial chain	Training	Post-operation Haglund disease R. foot
2	P.G.	M	21 ani	P.R. spiral chain P.L. spiral chain A. superficial chain	Training	Iliotibial friction syndrome L. Foot Flat Foot
3	S.O.	F	20 ani	P.R. spiral chain P.L. spiral chain A. superficial chain	Training	Suspect of R. femoral osteosarcoma
4	U.S.	M	20 ani	A. L. spiral chain P. L. spiral chain A. R. chain	Training	-

Legend: P=posterior, A=anterior, R=right, L=left

For evaluation, we used: the visual examination, palpation and surface electromyography (Biopac MP36).

The objectives of the recovery program were as follows:

- To reduce the muscle tone, especially in the areas of maximum tension;
- To increase muscle elasticity and joint mobility;
- To combat adhesions between the connective tissue and muscle;
- To facilitate the muscular synergy and eliminate the wrong movement patterns;
- To rebalance neuro-vegetatively the athletes after the competition periods or as a result of overworking training;
- To prevent injuries.

Content of the therapeutic program:

The therapeutic program consisted in the application of the myofascial release techniques. These are performed by placing a medium pressure on the skin, which is designed to penetrate each myofascial layer and induce relaxation. The application speed was reported to the tension in each muscle area. The literature recommends “feeling” the tissue and directing the pressure towards the direction dictated by it. The technique can be improved by helping the patients’ inhaling and exhaling or their active movements, the process being called ‘active myofascial release’.

The protocol used for the subject no. 1, P.A. consisted in the application of the myofascial release techniques, especially on the injured right foot. Since the subject had given up for 1 week on the plaster cast, the first 4 treatments were local, having the role of smoothing the scar and increasing joint mobility. In the following weeks, we focused our attention on the lower half of the posterior left chain (triceps surae muscles, hamstrings muscles and gluteal muscles). The last treatment, applied before the final evaluation, aiming at rebalancing the subject at the level of all the muscle chains.

In case of the subject no. 2, P.G. the intervention was based on the concept of the muscle chains. In the initial evaluation, the athlete had a right flat foot and a hypertony of the posterior right spiral chain. The treatment aimed at relaxing the muscles responsible for the flat foot (triceps surae muscles, anterior and tibialis posterior muscles) and releasing the posterior right spiral chain (plantar fascia, left triceps surae muscles, hamstring muscles, gluteal muscles and all the right paravertebral mass). After the 4th treatment, the pains diminished, and the subject was able to resume his sports activity.

Due to the pre-existing injury, the treatment applied to the subject no. 3, S.O. focused on the elimination of the left leg muscle tensions (quadriceps muscles, tibialis anterior muscles, hamstring muscles and triceps surae muscles). After the athlete resumed her sports activity, we intervened on the anterior chain (pectoral muscles, rectus abdominis muscles, quadriceps muscles and tibialis anterior muscles). The last 4 treatments were applied only on the left hamstring muscles, the patient being in the recovery period after a muscle strain.

On the subject no. 4, S. U. the intervention focused on the upper half of the anterior right chain (pectoralis and rectus abdominis) and the lower half of the posterior right chain (plantar fascia, triceps surae muscles and hamstring muscles). We applied this reasoning because the subject presented a kyphotic attitude, generated by a hypertony of the anatomical flexion chain. After each treatment, the athlete reported an increased mobility at the trunk level and a release of muscle tensions, especially in the calves.

The effects of the myofascial release techniques were improved by applying a personalized stretching program before every workout, weekly modified, depending on the treatment scheme applied. All the muscles which had the myofascial release techniques applied on were subjected to stretching 3 times a day for 2 minutes.

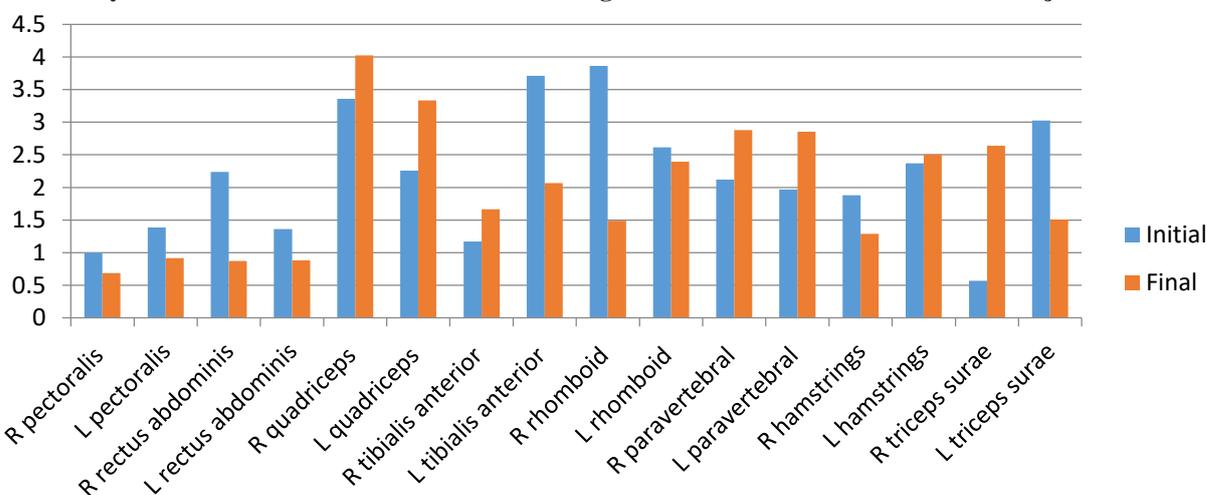
3. Presentation and interpretation of the results

Table no. 2 Values of the muscle contraction (mV) for the subject P.A

Measured muscle	MIVR	FMVR	IVMC	FVMC
R pectoralis	0.078	0.253	1.000	0.686
L pectoralis	0.097	0.116	1.378	0.916
R rectus abdominis	0.192	0.064	2.237	0.870
L rectus abdominis	0.177	0.049	1.362	0.882
R quadriceps	0.023	0.040	3.361	4.026
L quadriceps	0.031	0.061	2.259	3.334
R tibialis anterior	0.120	0.014	1.169	1.665
L tibialis anterior	0.033	0.090	3.713	2.067
R rhomboid	0.108	0.130	3.865	1.488
L rhomboid	0.352	0.106	2.615	2.393
R paravertebral	0.108	0.094	2.122	2.877
L paravertebral	0.029	0.068	1.970	2.854
R hamstrings	0.224	0.101	1.880	1.288
L hamstrings	0.243	0.068	2.371	2.508
R triceps surae	0.101	0.073	0.568	2.637
L triceps surae	0.034	0.118	3.027	1.508

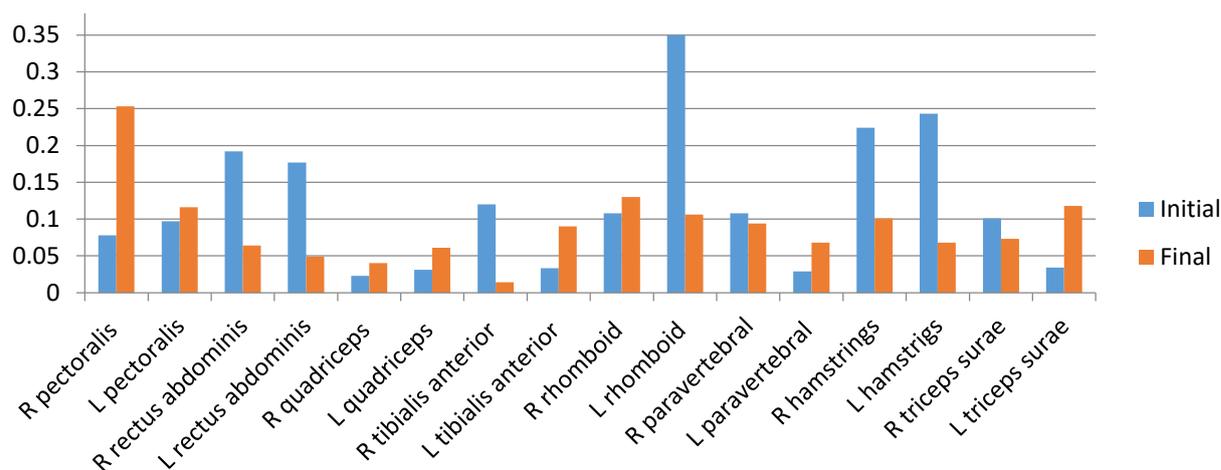
Legend: MIVR= initial maximum value at rest, FMVR= final maximum value at rest, IVMC= initial value at maximum contraction, FVMC =final value at maximum contraction, R=right, L=left, mV=millivolt

Chart no. 1 Dynamics of the muscle tone evolution during the maximum contraction for the subject P.A.



The chart no. 1 highlights the evolution of the muscle tone values during the isometric contraction. The most important changes occur in the right triceps surae muscle, whose values have increased 4 times (0.568 mV initially - 2.637 mV finally). In parallel, a half-decrease of the left triceps surae muscles (3.027 mV initially – 1.508 mV finally) and left tibialis anterior muscles (3.713 mV initially – 2.067 mV finally) can be observed. This reversal of the values is normal because the athlete had resumed her sports activity 1 week before the evaluation, the muscular tonus being diminished throughout the right inferior limb.

Chart no. 2 Dynamics of the muscle tone evolution at rest for the subject P.A



Regarding the muscle chain activity, we found that there was an increase of 0.220 mV in the final functional extension chain evaluation (initially 2.473 mV - finally 2.473 mV) and a decrease of 0.350 mV in the final evaluation of the functional flexion chain (initially 1.718 mV - finally 1.358 mV). Another change is encountered at the anatomical extension chain, decreasing its activity by 0.110 mV (initially 2.302 mV - finally 2.194 mV). These changes occur because at the time of resuming the sports activity, the muscle groups of the extension chain are the ones that contribute the most to the biomechanics of running.

Another important aspect is the reversal of the contraction capability of the posterior spiral chains. The left posterior chain (1.796 mV initially - 2.006 mV finally), specific to the right-handed, finally became more active compared to the right posterior chain (2.808 mV initially - 2.061 mV finally).

In the chart no. 2 the resting tonus values tended to decrease (initially 0.122 mV - finally 0.90 mV). We assume that there is a connection between the decrease of the resting tonus and the increase of the muscle contraction capacity, but this is not constant and the results cannot be generalized.

Table no. 3 Values of the muscle contraction (mV) for the subject P.G

Measured muscle	MIVR	FMVR	IVMC	FVMC
R pectoralis	0.130	0.012	0.746	2.344
L pectoralis	0.092	0.028	0.672	1.932
R rectus abdominis	0.120	0.090	0.746	0.576
L rectus abdominis	0.094	0.142	0.672	0.674
R quadriceps	0.071	0.015	3.361	4.026
L quadriceps	0.050	0.036	2.189	1.360
R tibialis anterior	0.119	0.026	1.665	1.805
L tibialis anterior	0.035	0.023	1.711	2.385
R paravertebral	0.090	0.106	1.273	1.186
L paravertebral	0.047	0.041	2.004	1.802
R gluteal	0.056	0.082	0.566	0.809
L gluteal	0.048	0.073	0.795	1.004
R hamstrings	0.048	0.049	0.568	2.103
L hamstrings	0.035	0.049	1.650	2.025
R triceps surae	0.048	0.033	1.744	4.195
L triceps surae	0.035	0.038	2.042	1.776

Legend: MIVR= initial maximum value at rest, FMVR= final maximum value at rest, IVMC= initial value at maximum contraction, FVMC =final value at maximum contraction, R=right, L=left, mV=millivolt

Chart no. 3 Dynamics of the muscle tone evolution during the maximum contraction for the subject P.G

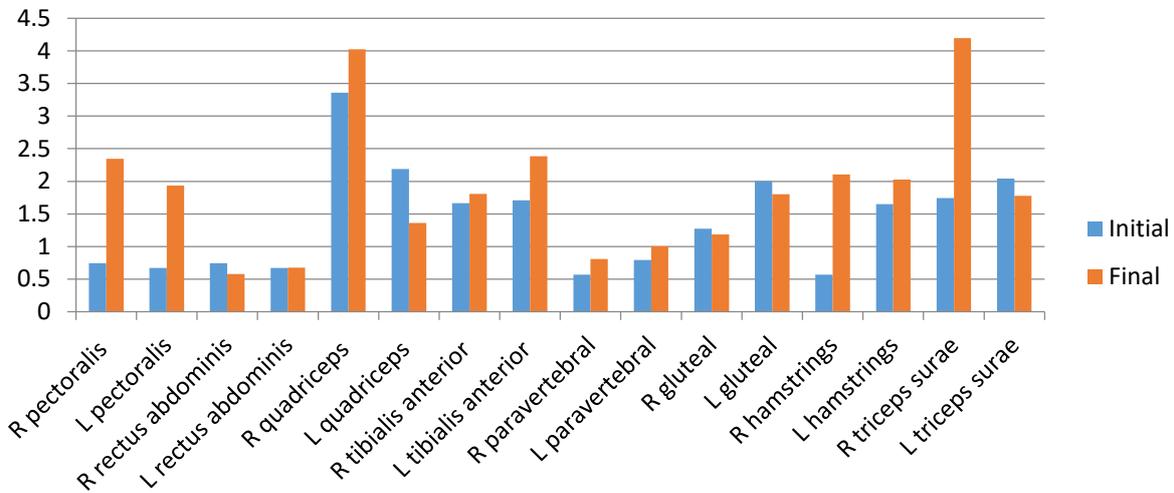


Chart no. 4 Dynamics of the muscle tone evolution at rest for the subject P.G

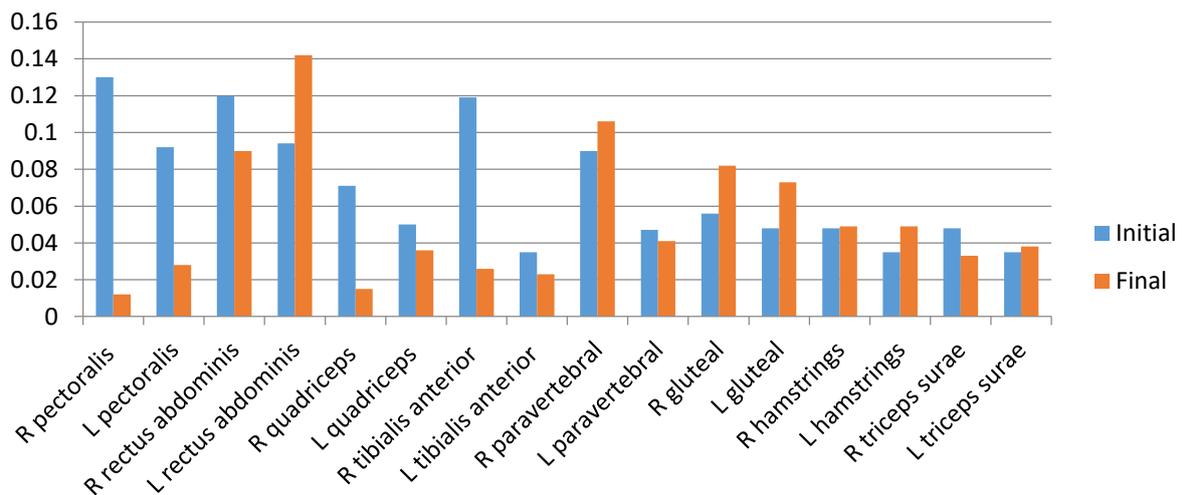


Chart no. 3 shows the evolution of the muscle tone during the isometric contraction for the subject P.G. Since the subject had a left flat foot, in the initial evaluation we can observe higher muscle values of the left inferior limb, left tibialis anterior muscle (1.711 mV) and left triceps surae muscle (2.024 mV), compared to the right inferior limb, right tibialis anterior muscle (1,665 mV) and right triceps surae (1.744 mV). We assume that the flat foot was responsible for the hyper-programming of the right posterior spiral chain, which led to the occurrence of the iliotibial friction syndrome.

In the final evaluation we can observe a doubling of the right triceps surae muscle tone (1.744 mV initially – 4.195 mV finally) and an increase in the right tibialis anterior muscle activity (1.665 mV initially – 1.805 mV finally). We believe that the doubling of the triceps surae muscle values increased the left posterior spiral chain activity, helping to rebalance the posterior muscle chains (1.220 mV initial left posterior spiral chain value - 2.227 mV final left posterior spiral chain value).

The resting tonus, highlighted in the chart no. 4, had a downward trend. Out of the 16 initially evaluated muscles, 12 had lower resting tonus values. The same trend is also for the

subject no. 1 - lowering the resting tonus value leads to an increase of the contraction capacity. The muscles with contraction values greater than 2.000 mV have a tonus at rest below 50 mV, the connection between the resting tonus and the contraction capability being confirmed.

Table no. 4 Values of the muscle contraction (mV) for the subject S.O

Measured muscle	MIVR	FMVR	IVMC	FVMC
R pectoralis	0.029	0.105	0.857	0.415
L pectoralis	0.104	0.043	1.035	0.423
R rectus abdominis	0.139	0.144	1.106	0.886
L rectus abdominis	0.088	0.092	0.781	0.405
R quadriceps	0.040	0.032	0.880	1.684
L quadriceps	0.052	0.012	1.683	2.344
R tibialis anterior	0.052	0.072	1.675	1.917
L tibialis anterior	0.059	0.040	2.820	2.516
R rhomboid	0.019	0.058	1.721	1.347
L rhomboid	0.030	0.045	1.970	2.118
R paravertebral	0.060	0.074	1.684	2.029
L paravertebral	0.037	0.077	1.600	1.247
R gluteal	0.078	0.045	1.242	0.410
L gluteal	0.079	0.035	1.453	0.529
R hamstrings	0.022	0.088	1.008	1.665
L hamstrings	0.009	0.140	0.603	1.299
R triceps surae	0.082	0.068	0.979	0.851
L triceps surae	0.052	0.080	1.568	0.677

Legend: MIVR= initial maximum value at rest, FMVR= final maximum value at rest, IVMC= initial value at maximum contraction, FVMC =final value at maximum contraction, R=right, L=left, mV=millivolt

Chart no.5 Dynamics of the muscle tone evolution during the maximum contraction for the subject S.O

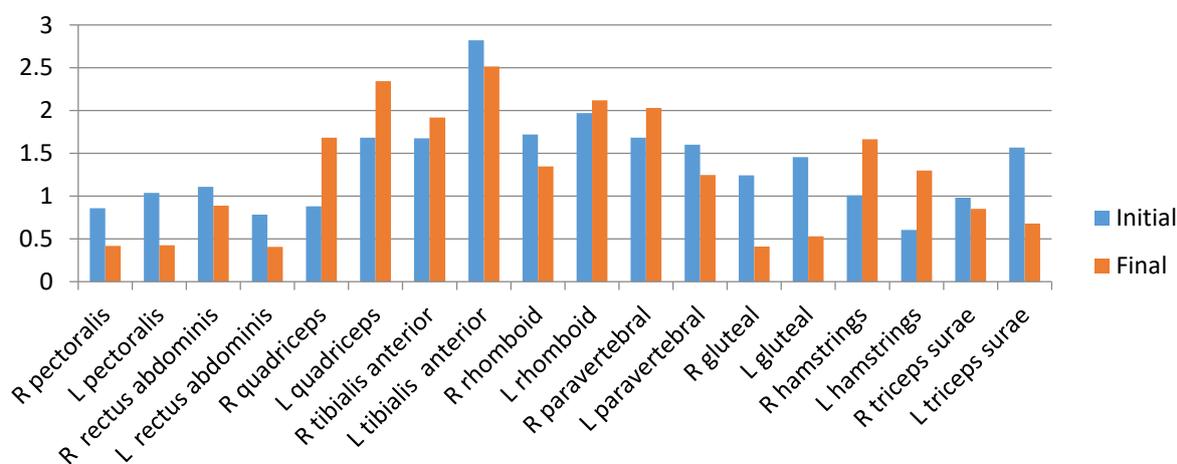
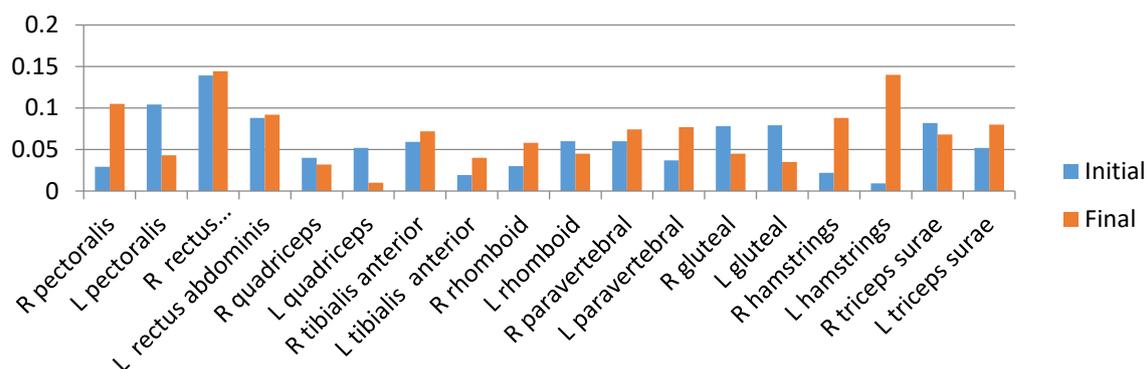


Chart no.6 Dynamics of the muscle tone evolution at rest for the subject S.O



Due to a pre-existing femoral injury, the values of the muscle tone highlighted in chart no. 5 were not interpreted according to the muscle chains.

By performing an individual analysis of the right inferior limb muscles, we can notice that the quadriceps muscles (initially: 0.880 right - 1.683 left, finally: 1.684 right - 2.344 left), the tibialis anterior muscles (initially: 1.675 right - 2.820 left, intermediate: 1.917 right - 2.516 left) and the triceps surae (initials: 0.979 right - 1.568 left, intermediate: 0.851 right - 0.677 left) had half the values from the counter side limb. These values are lower due to the presence of pain during running, the subject avoiding the load on the right inferior limb, the muscles losing their tonus. In the final evaluation, when the subject resumed training, these values became closer, the differences between them being almost inexistent.

Another important aspect is the fact that during the 4th week of treatment, the subject underwent a second-degree muscle strain as a result of an inappropriate warm-up. From the 4th week of treatment until the final evaluation, the intensity of the training was diminished, the athlete being integrated into a recovery program prescribed by the physical therapist. Although the athlete should have been 100% recovered at the final evaluation, the disregard of the resting period and muscle overload during training led to recurrence.

By analytically evaluating the values of the muscle contractions, we can see that the strain of the left hamstring muscle reduced the contraction capacity of the entire muscle chain, the results being more evident on the muscles with which it had functional connections - left triceps surae (initially 1.568 mV - 0.677 mV finally) and gluteal muscle (initially 1.242 mV - 0.410 mV finally).

The resting tone values shown in the chart no. 6 show an average increase by 0.012 mV/ muscle from the initial value, probably due to the existing injury.

Table no. 5 Values of the muscle contraction (mV) for the subject U.S.

Measured muscle	MIVR	FMVR	IVMC	FVMC
R pectoralis	0.152	0.137	1.271	2.231
L pectoralis	0.151	0.023	1.936	1.613
R rectus abdominis	0.212	0.062	0.538	0.856
L rectus abdominis	0.120	0.086	1.411	1.057
R quadriceps	0.016	0.082	2.737	3.605
L quadriceps	0.035	0.119	1.636	1.997
R Tibialis anterior	0.052	0.090	2.859	2.767
L tibialis anterior	0.022	0.032	3.829	2.738
R rhomboid	0.042	0.050	1.526	2.557
L rhomboid	0.052	0.045	1.655	2.268
R paravertebral	0.048	0.110	1.128	1.356
L paravertebral	0.021	0.036	1.087	0.865
R gluteal	0.075	0.012	1.120	1.638

L gluteal	0.094	0.061	1.443	1.185
R hamstrings	0.017	0.033	2.415	1.273
L hamstrings	0.063	0.008	1.410	1.743
R Triceps surae	0.026	0.040	0.655	1.190
L Triceps surae	0.040	0.017	0.574	1.424

Legend: MIVR= initial maximum value at rest, FR= final maximum value at rest, IVMC= initial value at maximum contraction, FVMC =final value at maximum contraction, R=right, L=left, mV=milivolt.

Chart no.7 Dynamics of the muscle tone evolution during the maximum contraction for the subject S.U.

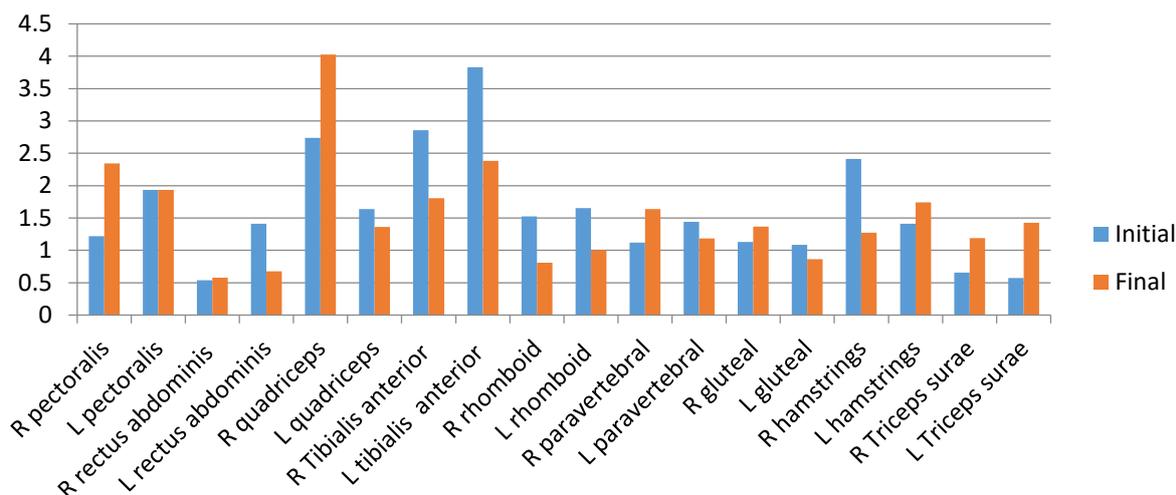
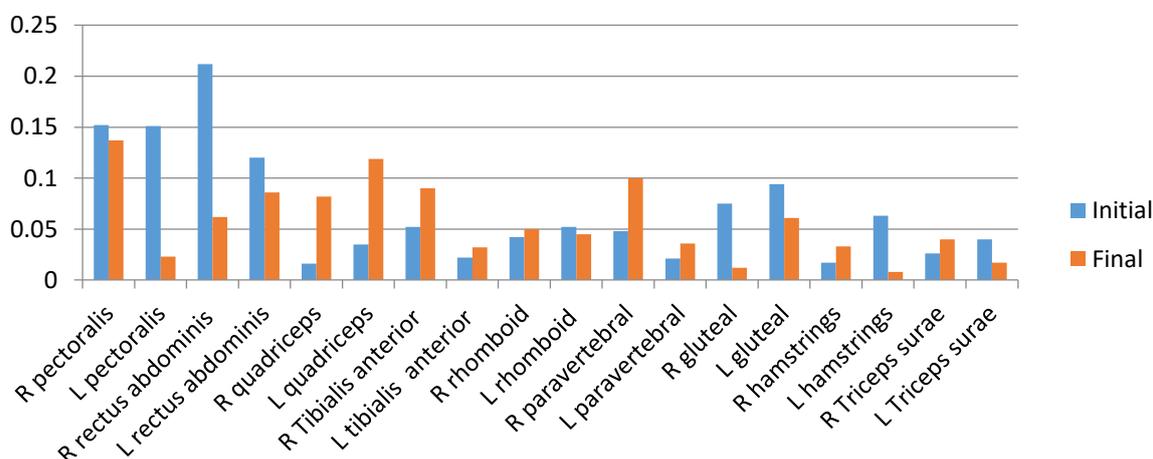


Chart no.8 Dynamics of the muscle tone evolution at rest for the subject S.U.



In the case of the subject S.U., the chart no. 7 shows the evolution of the maximum contraction values. There are no significant differences between the initial values and the final values, the changes only occur when assessing the muscle chains. In the initial assessment, the functional flexion chain was dominant (1.958 mV/contraction), resulting in a final estimate of 0.171 mV (1.787 mV/contraction). The functional extension chain had an initial average value of (1.365 mV/contraction), and at the end it had a value of (1.807 mV/contraction), the difference being 0.451 mV. The subject S.U. had the greatest increase of the functional extension chain (0.450 mV/contraction). This increase is normal because the athlete has a kyphotic attitude. Together with the release of the anterior trunk muscles (pectoralis, rectus

abdominis), the posture improved, allowing a better extension of the chest, therefore a stronger contraction of the spiral chain. Once the functional chain expansion values grew, we can see an increase of the anatomic extension chain by 0.200 mV / contraction.

The chart no. 8 shows the evolution of the resting tonus, but, because it presents fluctuations, the results cannot be correlated with the data in the literature, or with the data encountered in the other athletes.

4. Conclusions

The hypothesis according to which the intervention by using the myofascial techniques, based on the muscle chain concept, leads to a rebalancing of the muscle tone, has been confirmed and is evidenced by the following statements:

- As a result of the treatments we have applied, we have succeeded in reducing the resting tonus in all the athletes. Together with the decrease of the resting tone there was also a tendency to increase the maximum isometric contraction capacity;
- All the subjects experienced significant increases in their muscle activity on the functional extension chain, especially those who practiced short events (400-1,500 meters) as a result of the athlete's typology and the type of exercise practiced in accordance with the running biomechanics;
- The central nervous system dictates the functional motion patterns in relation to the peripheral tensions and according to the motor engrams formed by the repetitive movements specific to the sports event;
- The best results were obtained by the athletes who followed the physical therapist's instructions, except for S.O., who did not follow the treatment protocol, which led to the prolongation of the inactivity. Apart from the subject S.O., no athlete suffered injuries during the treatment period;
- The application of the myofascial release techniques, according to a well-established clinical judgment, can be very effective in the treatment of any musculoskeletal pathology;
- The coach-athlete-physical therapist collaboration is the success of an effective strategy to prevent injuries and increase sports performance.

Bibliography:

1. Frieder Krause, Lutz Vogt, Winfried Banzer, (2016). What Is Evidence-Based About Myofascial Chains, *Archives of Physical Medicine and Rehabilitation*, Vol. 97, issue 3, pages 454-461;
2. Meyers Tom., (2009). *Anatomy Trains: Myofascial Meridians for Manual and Movement Therapists 2nd ed.*, Editura Churchill Livingstone, Toronto, Canada;
3. Richter Philipp, Eric Hebgen, (2009). *Trigger points and Muscle Chains in Osteopathy*, editura Thieme, New York, SUA.
4. Budiman Minasny, (2009). Understanding the Process of Fascial Unwinding, *International Journal of Therapeutic Massage and Bodywork*; Vol. 2, Nr. 3;
5. Luigi Stecco, (2004). *Fascial Manipulation for Musculoskeletal Pain*, editura Piccin Nuova, Padova, Italia;
6. Frieder Krause, Jan Wilke, Lutz Vogt, Winfried Banzer (2016). Intermuscular force transmission along myofascial chains: a systematic review, *Journal of Anatomy*, 228, pp 910—918;
7. Huijing Peter., (2009). Epimuscular myofascial force transmission: a historical review and implications for new research, *International Society of Biomechanics*, 5;42(1):9-21;
8. Huijing Peter., (2016). Myofascial force transmission, *Encyclopedia of Exercise Medicine in Health and Disease*; pp 617-617;
9. Michael, Stranbourg, (2004)., *Direct Release Myofascial Technique – An Illustrated Guide For Practitioners*, editura Churchill Livingstone, China;
10. Manheim, Carol. (2001). *The Myofascial Release Manual ed. 3*, Editura Slack Incorporated, New Jersey, USA;
11. Maganaris Constantinos., Paul J., (2000). Hysteresis in Intact Human Tendon, *Journal of Biomechanics*, 33(12):1723-1727;
12. Paolo Tozzi., (2012). Selected fascial aspects of osteopathic practice, *Journal of Bodywork & Movement Therapies*, 16, 503e519.

A FUNCTIONAL RECOVERY OF AN ATHLETE WITH POST-EFFORT LUMBAGO

BREANĂ Bogdan, MAFTEI Ștefan,
National University of Physical Education and Sport,
Bucharest, Romania
e-mail: breana_bogdan@yahoo.com
Coordinator: Prof. RAȚĂ Gloria, PhD

Abstract: The research is a study on functional recovery of an athlete with lumbago after effort by means of physical therapy practices and methods. The survey is conducted on a Judoka patient diagnosed with post-effort lumbago. Tests and measurements were carried out during the acute, sub-acute and chronic phases by using the Visual Analogue Scale (VAS) for pain, but also specific techniques and methods for the articular and lumbar range of motion, to highlight the progress of the patient during recovery. The methods used in the research (bibliographic study, pedagogical observation, case study, data recording, statistical and mathematical processing and graphical representation) as well as the graphical interpretation have highlighted the effectiveness of combining several treatment plans (Williams, Klapp, Mckenzie) for a rapid and effective recovery of the athlete. The *hypothesis* started from the assumption *that if we combine rehabilitation programs, such as Williams (toning flexors) Klapp (toning the stabilizing muscle with positions aiming strictly at the interested vertebral joints) and Mckenzie (toning extensors), in athletes with lumbar inter-vertebral disc disorders, we will get an increase of the treatment efficiency, muscular rebalancing and a reduction of the idle sports activity*, which has been confirmed.

Keywords, recovery, sportsman, judoka, physical therapy, treatment program, post-effort lumbago

1. Introduction

The frequency of occurrence of the effort lumbar discopathies observed worldwide and in all sports requires to increase the preoccupations towards choosing the treatment methods and strategies and to expand their effectiveness as a result of scientific interventions and of a well-documented medical practice. Lumbar discopathy is a functionality disorder, a degenerative pathology that occurs in the inter-vertebral disc structure, reflected in the occurrence of changes in both the nucleus pulposus and the annulus fibrosus. Nowadays, it is considered that the degradation of the disc begins simultaneously at the level of both components of the intervertebral disc (nucleus and annulus fibrosus). From a histological point of view, the fibrous lamellae of the annulus fibrosus are made of elastic and connective fibers, dispersed or grouped cartilaginous cells and not too abundant in fundamental substance. This resistance structure complex is full of vessels and nerves” (N. Diaconescu C. Veleanu, H Klepp, 1977, p. 84). The causes of this disease are related to the functional needs of a multi-axis flexible spine and to the bipod position particularities, gravity exerting a greater pressure on the intervertebral discs. The spinal cord is formed of gray matter in the inner side and white matter at the periphery. The gray matter is disposed on the cross-section in the shape of the letter H, with an anterior horn composed of motor neurons and a posterior horn containing the cell bodies of the association sensory neurons (Voiculescu I. C., I. C. Petriciu, 1971, p 102).

The sciatic nerve is part of the sacral plexus, formed by the union of the anterior roots at the level of the vertebrae L5, S1, S2, S3. It leaves the pelvis through the great ischial recess and reaches the buttock, then the back of the thigh, and in the popliteal space it is divided into the internal popliteal sciatic nerve and the external popliteal sciatic nerve ¹ (M. Culiceanu, 2014, p.1)

This study on the effort lumbar discopathy, we emphasize the importance of exercise and physical methods as an essential part in the physical therapy treatment, being classically designed into two parts: a theoretical one and a practical one.

¹ CULICEANU, M., (2014), *Physical Therapy in Neurologic Disorders. Lecture 14* (In Romanian: *Kinetoterapia în afecțiuni neurologice. Curs 14*), Internal use, Faculty of Physical Education and Sport Iași, p.1

2. Material and methods

The present study was made in order to present the methods of physical therapy treatment to reduce back pain, to improve movement, to recover mobility, to restore the effort capacity and to rebalance the motor activity of an athlete in a short time, and to ensure the athlete's fast return to the training activity. The **hypothesis** which we wanted to check started from the assumption *that if we combine rehabilitation programs, such as Williams (toning flexors) Klapp (toning the stabilizing muscle with positions aiming strictly at the interested vertebral joints) and Mckenzie (toning extensors), in athletes with lumbar inter-vertebral disc disorders, we will get an increase of the treatment efficiency, muscular rebalancing and a reduction of the idle sports activity.* As **assignments** of the study we aimed to achieve the following tasks: patient selection; joint and muscle balance of the patient; design and implementation of a treatment schedule suitable to age and stage of the disease; following of the first stage of treatment; intermediate testing; design and implementation of the treatment program for the next stage; reintroducing the athlete in activity; final testing; data processing and interpretation of results. As **research methods** we used: bibliographic study, pedagogical observation, case study, data recording, statistical and mathematical processing and graphical representation.

The research performed the following **tests and measurements**: *case history* (which focused on the knowledge and information about pain, occurrence, duration, intensity, location, irradiation, triggers or accentuation, regional dysmorphisms represented by asymmetries of the chest, shoulder, pelvis, static spinal disorders and functional impotence); specific procedures both of the muscular and articular balance of the lumbar spine and Analogue Visual Scale (AVS) for pain. This study was conducted on a 20-year judo athlete, diagnosed with post-effort lumbago, in three stages, acute, sub-acute and chronic. The treatment was carried out in the Physical Therapy Room, at the Rheumatology Department of the Rehabilitation Clinic Hospital of Iasi, in January and February 2016, during which we applied tests and measurements followed by exercises specific for every stage.

3. Results

Following the case history, we found out that the patient F.S., during a pre-competition training while performing the throwing process to the opponent, accused a sudden pain and muscle stiffness in the lower back. After visiting the specialist doctor, he was diagnosed with lumbago after effort, requiring physical therapy services.

After the pain assessment using the VAS scale in the acute period a threshold of pain was estimated at the sixth level (Table no. 1), the patient being unable to perform the bending motion of the trunk. The range of motion (table no. 2) and muscles (Table no. 3) shows a significant functional delay.

The acute treatment program has achieved its goals (general relaxation, lumbar muscle relaxation, muscle contracture relaxation, lumbar muscle toning, lumbar protection), as evidenced by testing the intermediate specific for the sub-acute period.

Table no. 1. *Initial pain for the judoka F.S.*

AVS Pain
I
6

Table no. 2. *Initial lumbar articular range of motion for the judo athlete F.S.*

Flexion	Extension	Left bending	Right bending	Left rotation	Right rotation
I	I	I	I	I	I
120 ⁰	63 ⁰	70 ⁰	70 ⁰	75 ⁰	75 ⁰

Table no. 3. *Initial lumbar muscle range of motion for the judo athlete F.S.*

Flexors	Extensors	Side flexors	Rotators
I	I	I	I
F3	F3	F3	F3

A decrease of the pain intensity, an increase of the joint mobility and muscle strength have resulted from the change / adaptation of the exercise program according to the sub-acute stage, which aimed at eradicating pain and remained inflammation, eradicating lumbar muscle contractures, eradicating the position and dynamic lumbar disorders, toning muscles, maintaining muscle strength, lower back protection.

At this point there was a decrease of the pain threshold from the sixth to the third (Table no. 4), an increase of joint mobility by at least 5 ° (table no. 5) and an equal increase of the back muscle strength (table no. 6).

Table no. 4. *Intermediate pain for the judo athlete F.S.*

Pain AVS	
I	II
6	3

Table no. 5. *Intermediate lumbar articular range of motion for the judo athlete F.S.*

Flexion		Extension		Left bending		Right bending		Left rotation		Right rotation	
I	II	I	II	I	II	I	II	I	II	I	II
120 ₀	128 ₀	63 ⁰	68 ⁰	70 ⁰	75 ⁰	70 ⁰	75 ⁰	75 ⁰	85 ⁰	75 ⁰	85 ⁰

Table no. 6. *Intermediate lumbar muscle range of motion for the judo athlete F.S.*

Flexors		Extensors		Side flexors		Rotators	
I	II	I	II	I	II	I	II
F3	F4	F3	F4	F3	F4	F3	F4

Related to the graphical interpretation, performed at the end of the treatment by centralizing all the information from the initial (acute), intermediate (subacute) and final (chronic) testing, we can notice that the patient's pain decreased at an accelerated rate and constantly at every testing, reaching zero at the final test (Fig. no. 1). According to the articular

range of motion, it is observed how the functional delay has gradually decreased, increasing the joint mobility throughout the recovery, reaching the normal functionality level (Fig. no. 2). The data obtained from the tests applied to the muscle groups involved highlight the total recovery of the judoka FS. At the beginning of the first stage he showed Strength 3, and during recovery it grew at an equal and accelerated pace, reaching Strength 4 and Strength 5 (Fig. no. 3), the muscle memory being a very important factor.

The judoka F.S. was able to be reintroduced in the specific training.



Fig. no. 1. Final graphical pain interpretation pain for the judoka F.S.

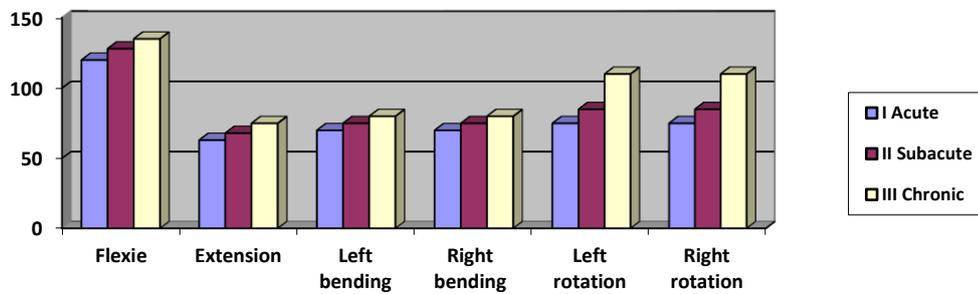


Fig. no. 2 Graphical interpretation of the final lumbar articular range of motion for the judoka F.S.

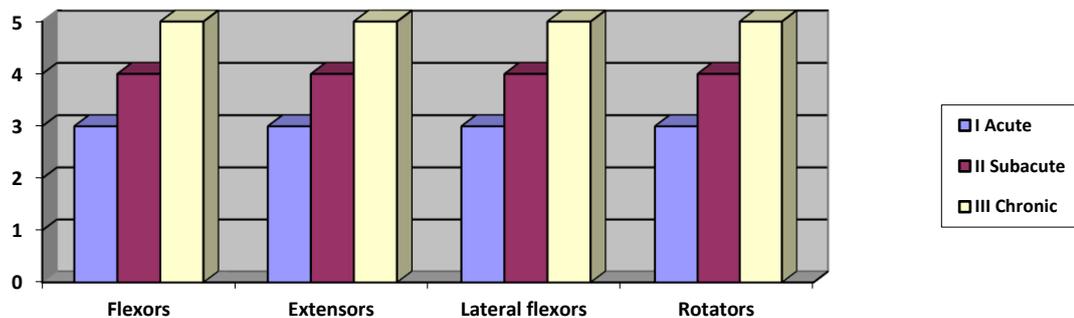


Fig. no. 3 Graphical interpretation of the final lumbar muscle range of motion for the judoka F.S.

5. Discussions

Many authors emphasize that a motor rehabilitation program is the most effective method of conservative treatment. Physical exercises are a good way to get numerous benefits, such as reducing pain, strengthening the spinal muscle, optimizing the load distribution on spinal structures, improving posture and increasing the overall physical capacity of the body (Radziszewski KR., 2007). Muscle strength is of great importance to the trunk stability. Previous studies have shown that the Mckenzie program turns out to be lower than the exercises

stabilizing the spine, and the Williams program is not as effective in combating back pain as the McKenzie (Ponte D.J., 1984) one, which emphasizes the need for their combination and not only for a maximum of efficiency. Some authors suggest that sit-ups are associated with the improvement of their lumbar discopathies, as during the abdominal contraction the pressure on the intervertebral discs decreases as a result of the increased intra-abdominal pressure (RODAKCI CLN, 2008). The treatment of the athletes with lumbar discopathies does not usually require surgery, as long as the recovery is performed in a correct manner, adapted to patient's needs by providing a comprehensive program.

6. Conclusions

Following the physical therapy program applied on the patient, according to the tests, and result charts, we concluded that combined exercises of each physical therapy program (Williams, McKenzie and Klapp) have a much more enhanced benefit in combating and treating the symptoms of lumbar discopathies than using a single program, which confirms the hypothesis we stated from the beginning of this study (if we combine rehabilitation programs, such as Williams, Klapp and McKenzie in athletes with lumbar inter-vertebral disc disorders, we will get an increase of the treatment efficiency, muscular rebalancing and a reduction of the idle sports activity.)

This is because no program used individually can train each muscle group necessary to treat the disease, the Williams program aims at toning flexors, the McKenzie program at toning extensors and the Klapp program at toning muscles stabilizing through positions which strictly deal with the vertebral joints concerned. It is therefore necessary to combine them for maximum efficiency.

The therapeutic means used have led to a decrease in pain during all the assessment moments and the results embodied in the final charts emphasize the role of the physical therapist in the evaluation and functional recovery of the consequences due to the lumbar suffering in order to develop the kinetic objectives, methods and means in the recovery program.

Bibliografie

- DIACONESCU, N., VELEANU, C., KLEPP, H.J.,** (1977). *Spine* (in Romanian: *Coloana Vertebrală*), Medical Publishing House, Bucharest, p.84
- VOICULESCU, I.C., PETRICIU, I.C.,** (1971). *Human Anatomy and Physiology* (In Romanian: *Anatomia și fiziologia omului*, Medical Publishing House, Bucharest, p. 102
- CULICEANU, M.,** (2014), *Physical Therapy in Neurologic Disorders. Lecture 14* (In Romanian: *Kinetoterapia în afecțiuni neurologice. Curs 14*), Internal use, Faculty of Physical Education and Sport Iași, p.1
- RADZISZEWSKI KR.** *Physical exercise in Treatment of Patients with Lumbar Discopathy*. *Ortop Traumatol Rehabil.* 2007 Jan-Feb; 9(1): 98-106
- MOHAMMAD HOSSEINIFAR, MOHAMMAD AKBARI, HAMID BEHTASH, MOHSEN AMIRI, JAVAD SARRAFZADEH.** *The Effects of Stabilization and McKenzie Exercises on Transverse Abdominis and Multifidus Muscle Thickness, Pain and Disability: A Randomized Controlled Trial in NonSpecific Chronic Low Back Pain*. *J Phys Ther Sci.* 2013 Dec; 25(12): 1541-1545
- PONTE DJ, JENSEN GJ, KENT BE.** *A Preliminary Report on the Use of the McKenzie Protocol versus Williams Protocol in the Threatment of Low Back Pain.* *J Orthop Sports Phys Ther.* 1984;6(2): 130-9
- RODAKCI CLN, RODACKI ALF, UGRINOWITSCH C, ZIELINSKI D, COSTA RB.** *Spinal unloading after abdominal exercises.* *Clin Biomech.* 2008 Jan;23(1): 8-14.

SENSORY DIFFERENCES IN AUTISM SPECTRUM DISORDER

Danciu , R. Fediuc, A.

National University of Physical Education and Sports (NUPES)

Bucharest, Romania

Email: razvan.physio@yahoo.com

Coordinator: Prof.univ.dr. Marinescu Gheorghe

Introduction

Autism is a developmental disorder characterized primarily by impaired social interaction and communication . Persons with autism had repetitive and stereotyped patterns of behavior (APA, 1994); perception, sensory processing and neurological dysfunctions result in various limitations. These atypical sensory reactions suggest unfortunate sensory integration in the central nervous system.

Motor skill deficits appear early in life for many young children with autism and become prominent around 14-24 months of age (Chawarska et al., 2007); these motor deficits including : hypotonia, akinesia, bradykinesia and postural control impairments. These motor symptoms can compromise the quality of life and the child's ability to perform activities of daily living.

Causes of autism spectrum disorder

The exact cause of autism spectrum disorder (ASD) is currently unknown.

It's a complex condition and may occur as a result of genetic predisposition (a natural tendency), environmental or unknown factors.

I. DATA & STATISTICS

In 2016, the Centers for Disease Control and Prevention (USA) issued their report about autism . The report concluded that the prevalence of autism had risen to 1 in every 68 births in the United States – [nearly twice as great](#) as the 2004 (table 1). In June 2014, [researchers estimated](#) the lifetime cost of caring for a child with autism is as great as \$2.4 million. The Autism Society estimates that the United States is facing almost \$90 billion annually in costs for autism (this figure includes research, insurance costs and non-covered expenses, educational spending, housing, transportation, employment, related therapeutic services and caregiver costs.)

Identified Prevalence of Autism Spectrum Disorder

ADDM Network 2000 – 2012
Combining Data from All Sites

Surveillance Year	Birth Year	Number of ADDM Sites Reporting	Prevalence per 1,000 Children (Range)	This is about 1 in X children...
2000	1992	6	6.7 (4.5–9.9)	1 in 150
2002	1994	14	6.6 (3.3–10.6)	1 in 150
2004	1996	8	8.0 (4.6–9.8)	1 in 125
2006	1998	11	9.0 (4.2–12.1)	1 in 110
2008	2000	14	11.3 (4.8–21.2)	1 in 88
2010	2002	11	14.7 (5.7–21.9)	1 in 68
2012	2004	11	14.6 (8.2–24.6)	1 in 68

Table 1

Purpose

The purpose of this article is to improve our understanding about autism spectrum disorder (ASD) and to present the sensory differences of this disability.

Tasks The main task of this article is to collect scientific information about autism spectrum disorder and the characteristics of this disability.

SENSORY DIFFERENCES IN AUTISM SPECTRUM DISORDER

Sensory issues, play an important role in how people with autism experience their world. Hyper- or hyporeactivity to sensory input or unusual interests in sensory aspects of the environment (apparent indifference to pain/temperature, excessive smelling or touching of objects, adverse response to specific sounds or textures- American Psychiatric Association 2013).

Stereotyped or repetitive motor movements, echolalia, self stimulation using objects or flipping toys ; this kind of self-stimulation are specific for this disability.

People with autism spectrum disorder may have a mixed sensory profile , very often hypo-sensitivity to pain but may be hyper-sensitivity to light such as someone brushing against them which they may experience as being deeply uncomfortable. The sensory differences each individual experiences may also be influenced by many factors: schooling , parenting, friendships, isolation, etc.

Auditory differences are common for people with ASD. These differences may manifest as hearing some sound more loudly than others or hearing "background noise" rather than more centralised noise. There are some theories about the reasons for auditory differences for people with ASD including overconnectivity of short-distance neurons and underconnectivity of long distance neurons (Courchesne and Pierce 2005, 2006)

Differences in visual perception are relatively common for people with ASD. It is speculated that these differences may be because of different sensory functioning in the visual cortex of people with autism and, similarly to auditory difference, is often connected to an inability to integrate different sensory stimuli when they occur.

Olfactory sensory differences are relatively little research . Tavassoli and Baron-Cohen (2011) study showed that the anxiety and stress are related to olfactory differences and the people with ASD are overly sensitive to smell.

Gustatory sensory differences may create many difficulties in the eating of certain foods (Grandin 1996) with "problem" eating behaviours reported in up to 75% of children with ASD (Cemak, Curtin and Bandini 2010). Gustatory differences include taste and smell , many people with ASD may manifest difficulties eating certain shaped foods of foods with a certain texture.

It is estimated that approximately 70% of people with ASD experience *tactile sensory differences* (Baranek et al.2006). It is not clear what cause tactile differences but it speculated that it may be improved by giving oxytocin- the chemical involved in human bonding- which appears to stimulate latent social abilities (Andari et al. 2010).

The vestibular system controls our sense of balance, it orients us in terms of keeping us upright and in suitable postural position, and in conjunction with proprioception, it allows us to make calculation as to our body movements in relation to gravity and our environment as well as co-ordinating those movements to allow us to function physically (AOTA 2011). It is uncertain what creates vestibular differences in people with ASD, it is speculated that it is connected to differences in sensory modulation. This theory suggest that many people with ASD are unable to process multiple sensory inputs simultaneously and in the case of vestibular differences , it may mean that the person cannot process the sensory information needed in terms of balance and orientation (Paton et al. 2012).

Proprioception is the perception of the body or limbs in the space that surrounds them , proprioception is integral to our development from infancy and works in tandem with our vestibular senses in particular to create a framework of physical identify for us. Similarly to other vestibular senses, it is as yet unclear why there are proprioceptive differences for people with ASD. It is theorised that it may be connected to inability to differentiate discrete sensory inputs or difficulties integrating sensory inputs (Paton et al. 2012). Having proprioceptive differences can have a huge influence on the lives of many people with ASD. These differences

can manifest in difficulties playing sports or doing other physical activities that require a level of sensory integration or dexterity.

Synaesthesia describes the ability of an individual to trigger one sense by the stimulation of another. This means that someone may be able to hear colours or see sounds, for example. The rate of synaesthesia in the general population is approximately 4% and for people with ASD 18,9% (Baron-Cohen et al. 2013)

Many people with synaesthesia also have greater memory recall and this may be useful in a number of contexts, for example in learning languages, remembering numbers, places, things or as a general aid to memory, all of which may be applicable to work or social situations.

Conclusions

Autism is a disability that is increasing constantly from year to year, the causes are unknown. Autism is evolving constantly in terms of how it is understood by the public, parents, researchers and the medical community. There has been a significant increase in the number of research books and media articles about autism spectrum disorder.

Every individual with autism is different, so each person will require different supports and services throughout the transition process. It is important to start early with the treatment and to think about the quality of life of the persons affected by ASD.

The sensory differences can play a huge role in the evolution of the children's life, in the therapeutic process and in the social interaction. The teachers, specialists or parents can optimize these differences for the children's benefits.

List of references

1. Adams ,B.J, et al (2004) Advice for Parents of Young Autistic Children Spring
2. Andari, E., Promoting social behavior with oxytocin in autism spectrum disorder
3. Armstrong, T. (2010) Discovering the extraordinary gifts of autism
4. Baird, G. et al, (2003) The diagnosis of the autism
5. Baranek G.T. (2002) Efficacy of sensory and motor interventions for children with autism
6. Baron-Cohen (2013) Is synaesthesia more common in autism ?
7. Benetto, L. , Olfaction and taste processing in autism
8. Bogdashina , O (2003), Sensory Perceptual Issues in Autism and Asperger Syndrome
9. Buchanan, T. W, (2007) Retrieval of emotional memories
10. Katarzyna Chawarska (2012 - 2012) **Autism in Infancy: Perceptual, Attentional, and Social-Cognitive Features**
11. Courchesne , E and Pierce K. (2005) Why the frontal cortex in autism might be talking only to itself
12. Rață M. (2006) General aspects about autism, Revista Gymnasium
13. Schoen , S.A., Miller, J.R, (2009) Physiological and behavioural differences in sensory processing: A comparison of children with autism spectrum disorder and sensory modulation disorder
14. Sinclair J., (1992), Exploratory and confirmatory factor analysis of the autism diagnostic interview-revised.
15. www.otak.org
16. www.autism-society.org
17. www.autism-resources.com
18. www.autism-pdd.net
19. <http://www.defeatautismnow.net>
20. www.sportautism.ro

GENERAL ISSUES REGARDING GENDER EQUALITY IN ROMANIA

Albu Sonia

National University of Physical Education and Sports (NUPES)

Bucharest, Romania

e-mail: albu.sonia@yahoo.com

Introduction

Gender equality must be a central objective of any democratic society that wishes to create full and equal civil rights for everyone. Equal opportunities for women and men is a fundamental right, a common value of the European Union and a necessary condition to achieve the E.U. economic growth objectives, engaging the labor force and a greater social cohesion. I consider that studying gender equality represents a point of interest for specialists in our field and not only, especially taking into account that, according to the European Index for Gender Equality published by the European Commission, Romania was on the last place both in the report done in 2005, as well as in those done in 2010, 2012, 2014, 2015.

The woman's status has varied considerably from one society to another throughout history. Since antiquity, women had subordinate functions and status in the society and political life of the European states. Although gender discrimination is a violation of human rights, in Romania, but also in Europe, gender inequality is still manifested, especially on the labor market where women are strongly represented in the less paid sectors and poorly in leadership and management positions. In this context, gender equality is an important point in what it means equal treatment for women and men, by taking into account their capabilities, needs and aspirations.

Purpose The purpose of this article is to highlight the main issues regarding gender equality in our country, the reasons for these issues and to also propose some possible improvements for the current situation.

Issues addressed Gender equality is a fundamental right which ensures everyone is free to develop their own skills and express their choices, without being influenced by the particularities of the gender to which they belong.

Although equality between women and men is a fundamental value of the European Union and is found in all European policies and projects, the differences between men and women are still considerable. The employment rate on the labor market is lower for women, just like the political power and women have a higher risk of poverty. According to EU reports, it is estimated that we need over 70 years to reach gender equality in terms of payroll and 20 years for women to have a 40% representation in national parliaments.

In Romania, the issue of gender equality is governed by a special law, 202/2002 law for equal opportunities and treatment between women and men. In addition to general stipulations, the law also describes the areas in which the measures are applied to promote equal opportunities and treatment between women and men and to eliminate all forms of discrimination based on gender. These areas are: work, education, health, culture and information, politics, decision making, supply and access to goods and services and other areas governed by special laws.

Studies conducted in Romania in recent years have highlighted the high rate of stereotypes and gender discrimination existing in our society. Stereotypes regarding the social role of men and women, as well as their involvement in traditional masculine and feminine activities are still present in our country. Romania also has the lowest living standard in the E.U.

(Eurostat, 2012), women have a low employment rate in the labor market and faces discrimination on employment (According to the National Strategic Implementation Report FSE, 2013).

One of the most complex researches made in Romania regarding women's image in society is The gender barometer (Barometrul de gen, Fundatia pentru o Societate Deschisa) conducted at the request of the Open Society Foundation, in 2000. The survey covered a sample of 1,839 people and evaluated gender stereotypes, as well as perceptions about women discrimination in Romania. The results showed that 70% believe it is the man's duty to bring money into the house, while 63% of the respondents think it is women's duty to handle the household chores. Also, 83% said that the man is the head of the family and 78% think woman must follow and listen to her husband. In terms of men's capacity to raise children as well as women, only 26% agreed with this statement.

The resulting data showed that Romania is still one of the countries with strong traditional values, where women have to carry out their activities in private space, while the man plays the public role. Therefore, the way in which the qualities of women are perceived in general have to match with the role they need to play in society: of housewives, mothers and wives.

The lack of women in public space is explained through the sociopolitical context (there are no legal measures to facilitate women's access to leadership positions), the perpetual cultural reality (this is not the women role) or the lack of women's skills (they are not made for this).

By integrating the information presented, we can conclude that the general stereotype in the current Romanian society on women is that their place is not in leadership or management positions, regardless of whether it is explained by the sociopolitical situation, lack of skills or cultural tradition and education.

Therefore, the content of gender stereotypes regarding women in management positions is generally centered on the idea that women are weaker, less-prepared, more emotional and less rational so they would be incapable to cope with a management position.

In the contemporary era, due to the women's ascension to management positions more and more often, studying the woman manager's status and gender discrimination has become a point of interest for many authors. The woman's path to senior management positions is presented in publications as paved with glass or, more precisely, with "glass shavings". When it comes to women in top management positions, studies abound in concepts involving this element, such as: glass ceiling (Singh si Vinnicombe, 2004), glass escalador (Williams, 1992), glass cliff (Ryan si Haslam, 2005). The most popular concept is the "glass ceiling", which signifies the possibility of women's ascension in management positions only to a certain point.

Statistics made over the last decades have identified an upward trend in the presence of women in management positions, but only for the middle level of management, while for top management positions women still have a very small percentage (2-5%, OCED, 1998, Singh and Vinnicombe, 2004). These percentages are due to the existing stereotypes according to which women have a poor professional training and a bigger family responsibility than men. In addition, it is considered that management activities are still traditionally masculine, while women are assigned household and childcare activities. Although women's promotion into management positions has begun to take place more and more often, they still occupy a very small percentage compared to men.

European Index for Gender Equality – 2015 Edition published by the European Commission has analyzed 3 periods – 2005, 2010, 2012 giving a comprehensive picture of the progress or regression registered by E.U. Member States. The index is organized into 6 main

fields: work, money, knowledge, time, power, health and gives scores from 1- total inequality to 100- total equality. The work field analyzes the positioning of men and women on the labor market, the money field examines inequalities in the economic situation and financial resources of women and men, the knowledge field shows the differences in education, the time field focuses on the relationship between work, domestic and care activities and other activities, the power field examines differences in representation of women and men in political and economic structures, the health field looks at differences between women and men in health status and access to health structures.

According to this Gender Equality Index, Romania is on the last place with a score of 33,7 points and was ranked last in each report (2005, 2010, 2012). With scores lower than 40 points are also the following countries: Slovakia - 36.5, Portugal - 37.9, Greece - 38.3, Bulgaria - 38.5, Croatia - 39.8. On the opposite pole, on the first place is Sweden with 74.2 points and the E.U. average score is 52.9 points.

At the same time, there is a group of 5 countries in which the score recorded constant decreases in all three analyzed periods: 2005, 2010, 2012 - Romania, Slovakia, Croatia, Lithuania, United Kingdom. Romania had a score of 36.0 points in 2005, 35.0 points in 2010 and 33.7 points in 2012.

The sector where inequality is the largest in Europe is the decision-making power, followed by time spent on unpaid and domestic activities. Romania had the lowest score at "time dedicated to domestic and unpaid activities" the decision-making power being on the next place.

The areas in which Romania recorded the biggest differences from the European average are: financial resources: with a score of 21.1 points vs. the average score of 58.0 points, time: 17.4 points vs. 37.6 points, political power: 19.2 points vs. 49.8 points.

Discussions and conclusions. Analyzing the data from the European Index of Gender Equality we can come up with some conclusions on gender equality both at European level and at national level.

The sector where inequality is the largest in Europe is the decision-making power, with a score of 38 points out of 100, also translated in the fact that fewer women than men have key positions. On the next place is time spent on unpaid and domestic activities (with a score of 39 points). According to E.U. experts, the main reason why women are less represented in the labor market is because they spend more time than men on domestic activities. Romania had the lowest score at "time dedicated to domestic and unpaid activities" with a score of 17,8 points, the decision-making power being on the next place with a score of 24,9 points.

Time spent with household activities is unequally distributed between women and men, across all European countries. A more effective implementation of European legislation is needed to provide structures and services for childcare and public policies to harmonize work and family life. Part-time work is mostly done by women, which increases the risk of poverty and strengthens the traditional care role assigned to them.

Although men continue to be a majority in all countries, in all fields of work, representation of women in economic structures is however the indicator with the highest increase. The greatest progress has been made in the presence of women on the leading boards of companies listed on the stock exchange. There is also a European Directive which encourages companies to increase the presence of women by 40% until 2020. No final decision has been made on the imposing of gender quotas. The data in the Index demonstrates the need and urgency of some firm policies in this direction. Also, regarding the political representation of women, this has a very poor growth, even stagnation.

The field of education is recording an improvement, but real progress is stopped by gender stereotypes, segregation and lack of access to continuous education for women. However, women outnumber men at graduating higher education.

Women continue to be more vulnerable due to lower incomes which generate an increased risk of poverty. The European objective to reduce poverty rate by 25% until 2020, must also take into account the gender criterion.

More research and data on violence against women is also needed. The eradication of gender violence is an assumed objective of the European Union through numerous Directives and the Istanbul Convention. However, collecting data is difficult. The social and cultural context may prevent disclosure of acts of violence and their confession. The only survey that attempted to measure violence in a unitary way in all member countries was conducted at European level in 2014. The approach failed to measure the real violence faced by women, since there is a large difference between facts and what they revealed.

Although the EU already has many achievements in reducing gender discrimination, only 14% of ambassadors, 9% of university deans, 3% of large company presidents and 2% of ministers are women. Also, according to EIGE, on average, women earn 2 euro per hour less than men.

In conclusion, giving the presented data, in my opinion, research on gender equality is extremely important and necessary and a real priority for our country. The European Union is only halfway to an egalitarian society from a gender perspective with an average score of 52.9 points out of 100, while Romania has barely covered a third of the road to gender equality with the lowest score in the E.U., 33.7 points.

References

- Avram, E., Cooper, C., 2008, *Psihologie organizațional-managerială, Tendințe actuale*, Editura Polirom, Iași
- Cornea, A., Petreuş, I., 2012, *Ghid privind egalitatea de șanse și de gen în România*, Publicat în cadrul proiectului: Promovarea principiului egalității de șanse și gen în cadrul partenerilor sociali cu accent pe instituțiile de educație
- European Commission, *Gender Equality in Sport. Proposal for Strategic Actions 2014 – 2020*
- Kim Wickman, Kent Löfgren, Inger Eliasson, Madelene Nordlund, 2014, *Gender equality and sport — an equation difficult to solve?*, Swedish Journal of Sport Research
- Ministerul Muncii, *Ghidul aplicantului pentru programul „Promovarea egalității de gen și a echilibrului între viața profesională și viața privată” finanțată prin Mecanismul Financiar SEE 2009-2014*
- Nica, E., 2008, *Psihosociologia Managerială*, Editura Economică, București
- Shaw, S., Frisby, W., 2006, *Can Gender Equity Be More Equitable?: Promoting an Alternative Frame for Sport Management Research*, Education, and Practice, Journal of Sport Management
- Scott, K., 2003, *Femeia de succes, Calea spre un potențial nemărginit*, Editura Polirom, Iași
- http://ec.europa.eu/assets/eac/sport/library/documents/final-proposal-gender-equality-sport-1802final1aw_en.pdf
- http://ec.europa.eu/justice/gender-equality/index_en.htm
- http://ec.europa.eu/newsroom/just/item-detail.cfm?item_id=52696#annual_reports
- <https://www.senat.ro/UploadFisiere/106d721d-55e0-4283-ad91-45926e1b1b64/ghid-egalitate-de-sanse-anofm-ifi.pdf>
- http://www.stantonchase.com/best_practices/Romanian_Woman_in_Management.pdf

A STUDY ON USING BADMINTON AS AN ATTRACTIVE LEISURE-TIME MEANS

*MAFTEI Ștefan, BUIUCLIU Ștefan,
National University of Physical Education and Sport
Bucharest, Romania
e-mail: stefanm0220@yahoo.com
Coordinator: Prof. RAȚĂ Gloria PhD*

Abstract The study aims to set a clear answer to a question such as “Can badminton be an attractive means to spend the leisure time?”, by identifying a general opinion about the characteristics of badminton regarded as a leisure-time means. The hypothesis of the study is based on the assumption that badminton can be a viable alternative for leisure activities. We have used as research methods the following: the bibliographical study, inquiry, statistical and mathematical method and graphical method. In order to verify the hypothesis, a total of 60 children were included in the study. They responded to the proposal to complete a questionnaire consisting of 20 questions. The study results have revealed that badminton is an enjoyable sport and easy to learn, and most of the students have expressed their interest in practising this sports game.

Keywords: means, leisure time, disciplines, sport

I. INTRODUCTION

Every person is different in his/her own abilities and preferences, that is why each one of us have to carefully analyze our own relation with time by avoiding comparisons to other people. The structure of free time and the costs of spending it have lost some of their luxuriant touch of existence and free time has become an essential part of life in developed countries. The participation in recreational activities, the joy of holidays are no longer a privilege, but more of a right of everyone in countries with a modern market economy. [1] “Free time is the time free from any compulsory social work, the time in which people stop participating in creating the social product“. It is the time that people spend in accordance with their desires, interests and necessities, and the fulfillment of these offer them joy, gratitude and moral satisfaction. [2]

Our lives cannot be conceived without game, which is not characteristic only of children, but it is part of human life, even if it holds the main place in childhood. Game is thus an activity characteristic of human species. Scholars from the domain of psychopedagogy have produced many game theories, underlining its importance and contribution to the training of the individual for work, life and also to the forming and developing human personality in general and its contribution to the process of socialization of the individual. [3]

Modern badminton was invented in England, in the city with the same name, its rules being established in 1887, when the first badminton club in the entire world was established, named The Badminton Club from Bath. At first, the sportive side was less important, it being before anything else an excellent game of society. Men wore hats and tail coats, and women wore hats of different colors and long train dresses. The English Association of Badminton was the first specialized association, thus badminton being acknowledged as a new sport and the first British championship was organized in 1899, in London. In 1934, badminton associations of England, France, Denmark, Ireland, Canada, Holland, Scotland, New Zealand and Wales formed the foundation of the International Badminton Federation (I.B.F) [4]. From its 9

members the International Federation presently counts more than 150 members, Romania being one of the countries that is part of the I.B.F.

If badminton can be used as an attractive way of spending free time is going to be established after the research which tries to analyze this discipline especially from the perspective of essential characteristics of the ways of spending free time.

II. ASPECTS FROM RESEARCH METHODOLOGY

The purpose of this research paper is to answer the question “can badminton be an appealing way of spending free time?”. We have tried to answer this question by identifying the general opinion concerning the characteristics of badminton as a way of spending free time and comparing these characteristics with those of other already well-known ways of spending free time.

This research paper aims to verify the hypothesis according to which badminton can be a viable alternative in free time activities.

The research methods used: bibliographic study, inquiry, statistical and mathematical method, graphical method.[5]

The subjects surveyed to verify the hypothesis and to reach the goal were 60 pupils, 25 boys and 35 girls, being between 10 and 13 years old, and they agreed to complete a questionnaire that had 20 questions.

III. RESULTS AND DISCUSSIONS

The questionnaire consisted of four types of questions: basic questions, identifying questions, verification questions and dissemination questions. We consider the basic questions the most relevant for this research.

According to the answers given to the question “how many times did you play badminton in your free time?”, 27% of the pupils had played badminton at least 10 times before, 27% had played 20 times or more, 18% had played 3 times or less, 18% had never played badminton, and 10% had played badminton at least 3 times. In **fig. no. 1** it can be observed that more than half of the pupils surveyed had played badminton at least 10 times before, which indicates a high interest in this game.

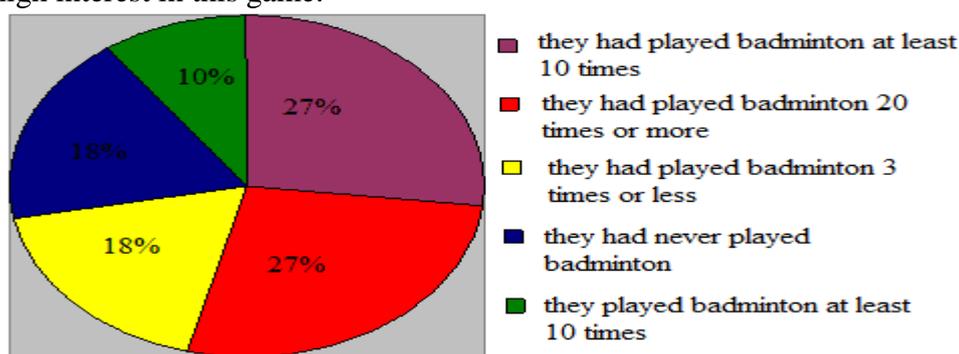


Fig. no. 1. Graphical presentation of the answers given to question number 1

By analyzing the answers to the question concerning the daily schedule of pupils, it can be observed that 28% of the pupils have a daily schedule that differs from day to day but they have time for sportive activities as well, 25% have a normal daily schedule, 24% have a very busy daily schedule, 12% have a light daily schedule and for 11% the daily schedule differs from day to day but they don't have time for sportive activities. **Fig. no. 2** highlights the fact

that there is willingness for sportive activities, at least concerning time. On the other hand it can be observed that almost a quarter of the subjects state that they have a very busy daily schedule.

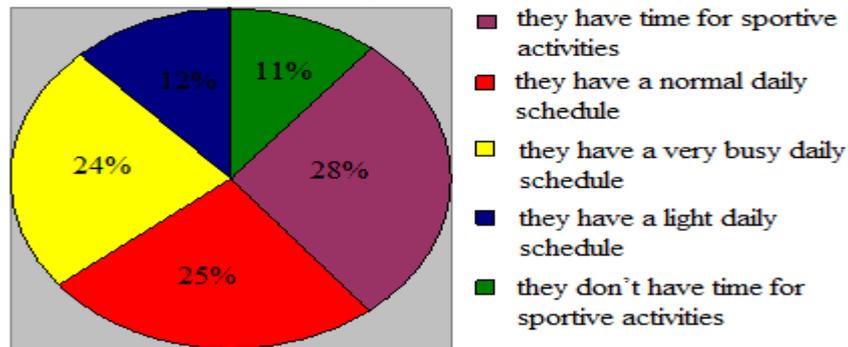


Fig. no. 2. Graphical representation of the answers given to item 11

To the question “which of the following disciplines would you like to practice in your free time?” most of the subjects answered “soccer” (35), 20% answered “tennis”, 17% answered “basketball”, 12% would like to practice badminton, 10% handball, 8% volleyball and 3% gymnastics. **Fig. no. 3** highlights these percentages which indicate that badminton is a sport favoured by a significant number of pupils.

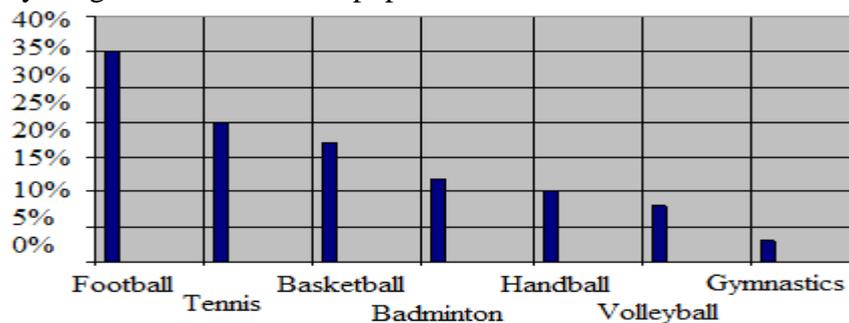


Fig. no. 3. Graphical interpretation of the answers given to question number 14

By analyzing the answers given to the question “which of the following sports would be easier to learn?” we can state that 27% of the pupils consider that badminton is the easiest sport to learn, 25% believe that soccer is the easiest sport to learn, 12% believe that swimming is the easiest sport to learn, 10% believe that handball is the easiest sport to learn, 8% consider tennis the easiest sport to learn, 7% believe that martial arts are the easiest to learn, 7% believe that basketball is the easiest to learn and 4% believe that volleyball is the easiest sport to learn. **Fig. no. 4** highlights the fact that badminton is considered an accessible sport, easy to learn for most of the pupils.

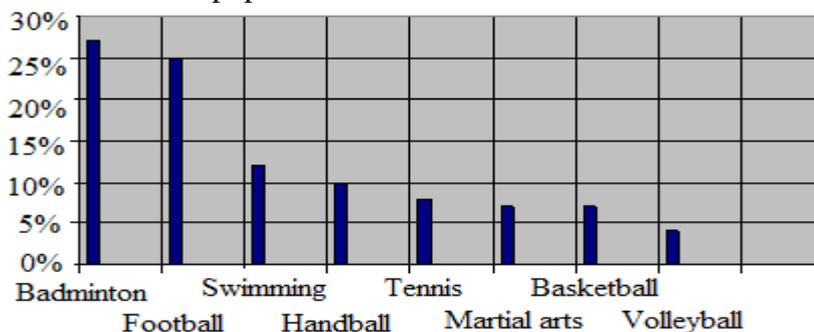


Fig. no. 4. Graphical interpretation of the answers given to question number 15

Lastly we present the results to item number 16 “even if my schedule is very busy, I would be glad to play badminton...”. The results point out that there is a great interest in practicing badminton: 42% of the pupils would be very glad to play badminton at least 2 times a week, 38% would rather play badminton once a week, and 20% are not interested in playing badminton. **Fig. no. 5** highlights the surprisingly high number of pupils interested in playing this game.

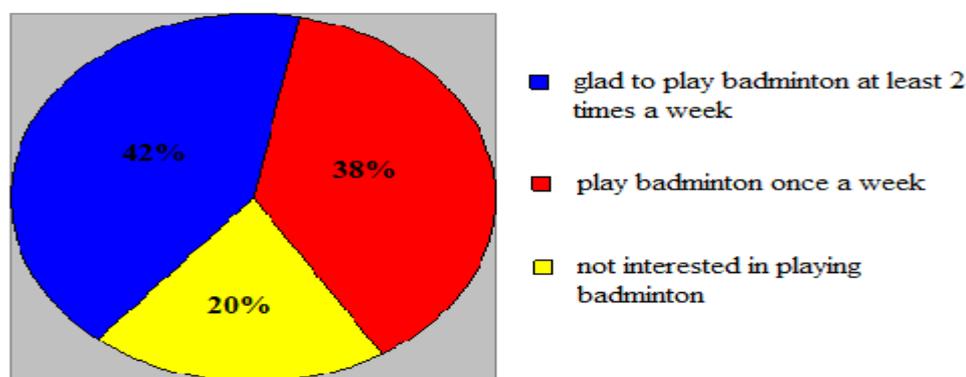


Fig. no. 5. Graphical representation of the answers given to item 16

IV. CONCLUSIONS

The analysis of the results and their interpretation confirms the hypothesis according to which badminton can be an excellent way of spending free time. The confirmation of the hypothesis is supported by the following arguments:

- a significant percentage of pupils had played badminton several times before they were surveyed and know the main rules of this sport;
- for most of the pupils the daily schedule is not an impediment in practicing sportive activities;
- badminton is a greatly favored sportive discipline by pupils;
- badminton is an accessible sport, easy to learn for most of the pupils;
- most of the pupils have expressed their interest in practicing the game of badminton;

REFERENCES:

- [1] Nichifor, F. (2010). *Organizarea timpului liber și a activităților sportive recreative- note de curs*, Editura UAIC, Iași, pag. 172
- [2] Rață, G., (2007). *Strategii de gestionare a timpului liber –curs masteranzi*, Edit Pim, Iași, pag. 33
- [3] Rugină, E. (2010). *Activități ludice- note de curs*, Editura UAIC, Iași, pag. 257
- [4] Ochiană, N. (2006). *Badminton- Curs pentru studenții facultăților de educație fizică*, Editura Pim, Iași, pag. 9
- [5] Chirazi, M. (2010). *Metodologia cercetării științifice și elemente de statistică in educație fizică și sport- note de curs*, Editura UAIC, Iași, pag. 104

THE BENEFITS OF RESILIENCE AND SPORTS IN POOR SOCIETIES

Cîmpeanu, Adrian Mădălin

National University of Physical Education and Sports (NUPES)

Bucharest, Romania

e-mail: cinpeanuadrian@gmail.com

Coordinator: Lect.univ.dr. Bejan Roxana

Abstract. The concept of “resilience” is used in many areas. In psychology, it represents the power of a person to manage stressful or overwhelming events, trauma that individuals experience in their life span. Poverty can be a main cause for these challenging events. Poverty is a phenomenon identified in human history and certain historical events led to the emphasis of poor conditions for certain societies. Today, it’s a complex issue on a global scale. In poor societies, population’s education suffers and has a high risk of social exclusion. But poverty has taken possession to over half of the countries of the world. The solution to these complex issues is related to motivate, to communicate, to create and to have a positive thinking, no matter what or shortly to become resilient.

Key words: *resilience, poverty, education, social exclusion.*

The concept of resilience has a French origin, *résilience*, that comes from the latin *resilire*, meaning to “rebound after a violent physical shock”. The first to use the concept of resilience were the physicists, referring to a certain characteristic of the materials which can resist on shock without a permanent distortion. Later the term, rich in meanings, was used in economy, informatics, biology and politics, especially in psychology and social sciences.

Psychological resilience refers to resistance, inner strength of a person to face the stressful, traumatizing, overwhelming events, during his life span. Also, according to Șerban Ionescu (2007), the term of resilience can be associated with: “the ability to endure the challenges“, “keeping sense and coherence“, “invulnerability“, “the ability to adapt to stressful situations“. Scientists have tried to understand the mechanisms that enable certain human beings to manage and adapt to alienating life events such as traumas, tragedies, genocide, wars, following the same old question regarding resilience’s innate or acquired nature. Boris Cyrulnik, one of the contemporary psychologists, refers to the matter and regards resilience as a characteristic acquired during the life span development, during everyday experience.

Resilience is an individual ability acquired during ontogenesis, while poverty is a social phenomenon defined and analyzed in groups, in the context of social dynamics, political events, economical and educational characteristics of certain historical periods.

Poverty is a phenomenon identified along the human history but certain historic periods shaped different social aspects. Thus, industrialization, colonialism, slavery, wars, led to situations where resources were preferentially distributed between social classes. Social inequity once arisen tends to exacerbate the differences between individuals or groups of individuals. Poverty is a phenomenon characterized by the lack of necessary resources to satisfy the basic needs of each individual and it includes social, economic and political elements. According to experts, poverty means: low level of income, consumption and unemployment, insufficient or poor-quality food, poor health, limited access to education, limited participation in decision making and low possibilities to influence living standards.

Poverty is a complex issue, nationally and internationally. There isn’t a viable solution against global poverty; so national and international programs have a very important role in this process. Eradication of poverty and hunger are the major problems the world is facing.

Worldwide, The Food and Agriculture Organization of the United Nations estimates that in the world, 795 million persons suffer because of poverty and hunger. Among these, only in the Democratic Republic of Congo, 77.2 % of the population lives on 1.90 US dollars per day or less, estimates World Bank.

In Romania, the statistics regarding poverty and the percentage of children who are facing harsh situations and risks regarding their development, education and social inclusion, are discouraging. But the data show us that half of the Romanian children live in such risky situations, mainly in rural areas.

According to World Bank, the poor European countries include Romania, as well. For Romania, poverty rate indicates an important difference between urban and rural areas.

Year People at risk of poverty or social exclusion (in percentages) for Romania are.

Year	Bucharest-Ilfov	Centre	Northeast	Northwest	South	Southeast	Southwest	West
2007	35,1%	37,6%	55,1%	38,3%	50,3%	51%	55,4%	34,2%
2008	36,2%	37,2%	54,5%	33,7%	45,6%	48,6%	56,5%	33,4%
2009	41,9%	33,2%	52,9%	35,2%	48,1%	42,4%	52,9%	30,1%
2010	34,4%	30,3%	51%	30,8%	42,7%	51,8%	48%	35,5%
2011	28,4%	28,5%	51,2%	34,3%	43,1%	50%	44,8%	33,1%
2012	31,5%	31,6%	52,3%	31,9%	43,5%	51,7%	46,9%	36,2%
2013	30,3%	32,8%	48,9%	30,9%	40,9%	53,4%	45,6%	37,5%

The statistics show that poverty rates vary in different areas of Romania. In the rural areas, the number of poor people reaches 50%. In 2013; the Southern Rural Area registers 44.3 percent risk of poverty or social exclusion, while in the urban areas the situation is much better, only 14.1% of the population living in poverty (Bucharest). So, we understand there is a connection between the economic level of the population and the degree of social exclusion and poverty risk.

This difference between the urban and rural areas makes rural social groups more vulnerable to the economic and social transition period after the end of the communist era. The harsh situation pushes Romania in a critical state. Along with these social and economical aspects, Romania starts facing the consequences of the World Recession in 2007-2009, and the percentage reflecting the social disadvantages is getting higher.

The statistics show that in 2007, at the beginning of the Economic World Recession, the county that is the most affected by poverty is the South-West of Romania, where 55.4% of the population is poor. In Bucharest, poor population is of 31.5%, but that represents the lowest score in the country, with the lowest risk of social exclusion. In the rural areas, most of the people are farmers or unemployed workers. The highest percentage of unemployment is in the mountain area where the infrastructure is weak and there are no social services provided for the locals.

In 2010, the effects of the US financial crisis get to Europe, as well as to Romania where in the South-West the percentage of poor people gets to 48%. In Bucharest, the capital, the population affected by the poverty gets the same numbers, 34.4%. The small difference between 2007 and 2010 of poor individuals in Bucharest indicates financial stability.

Another cause of poverty in Romania is the low level of agricultural production. The small agricultural investors don't have satisfying incomes that they can invest in better

equipment for increasing their resources and efficiency. In this way they could get a better economical stability and a decreasing level of social exclusion.

The last statistics show that in 2013, in Bucharest, there is still is a 30.3% risk of poverty – meaning a low perspective of economical development. In other areas of the country the average stats is over 42%.

Half of the Romanian population faces challenges of subsistence; education and educational resources become secondary on the priority scale. Resilience is determined by education and the role model of the teachers or other important attachment figures. So, the Romanian poor population can hardly access the advantages of education, instruction and sports, while focusing on survival and basic needs. Analyzing all these elements we understand that, due to the lack of education, the poor population has important limits in building its resilient support through the benefits offered by education and sports.

Education can be understood as a complex process of life span development, while physical education is an important part of it.

Physical education brings important benefits at a physical and psychological level. A well functioning body sustains the educational process while poverty is associated to malnutrition, viral and chronicle disease, which have an impact on the well-being of the individuals. The poor health of disadvantaged students can reflect in their school non-attendance caused by flu, infections, irritability, headaches, chronicle fatigue and hunger. Physical education and sports bring their contribution to the improvement of children's health, and have different sorts of benefits on the short and long term, like improvement of immunity or blood circulation. The blood circulation improves the brain blood supply and prevents chronicle fatigue, headaches, leading to a better physical and mental state of mind.

Self-control is a priority in decision-making and it is acquired through physical education and sports. This balanced decision-making process can cause a significant drop at the emotional level: less irritability and tension, less anger. Children and young people's relationships become more harmonious and supportive if they have an emotional balance. Emotion control is a decisive element in sustained attention improvement.

So we can see the psychological and social benefits. Children and young people's harmonious relationship create a good feeling; the level of fear related to competitions decreases and they become better team partners and opponents. It is noticed that for those who are resilient there is a notable initiative for physical and sports activities, as a consequence of better self-confidence and of the development of the ability of engaging others in action.

”Resilient people face the same events as a non-resilient person; their way to respond to these events is different. ...Being resilient in the sports career does not ensure success and winning games and competitions. Failure is an important part of the resilient sportsman's career, but even when failing, the resilient sportsman will continue to be focused on reaching for his goals and his mistakes will not disturb his activity.”, according to Bejan, R. & Tonița, F., in 2013.

Children and young people who play sports can engage with courage in unpredictable activities and events that require daring and perseverance for the achievement of purpose. Tenacity is the characteristic that belongs to the educational process, which associated with a good life style will determine major changes in an individual's approach. That means the individual will permanently and constantly fight for economic limitation, state of disadvantage, social, economical, educational and emotional gain. This inner transformation, associated with a role model, turns a poor child or young person into a resilient one, an immune person able to face difficult life situations without losing their sense of action, the coherence of plans, or the purpose for which they struggle with.

It's considered that physical education and sports make a contribution to the process of human becoming – the transformation of a poor individual from a precarious environment into a resilient person.

It is stated that physical education and sports have a saving role.

Bibliography:

1. Bejan, R., Tonița, F., *The Role of The Resilience In Coping Wth Stress In Sports*, The International Congress of Physical Education, Sports and Kinetotherapy, Bucharest, 2013
2. Cyrulnik, B., *Murmurul fantomelor*, Ed. Curtea veche, București, 2005
3. Ionescu, S., 2007, *Reziliență și concepte apropiate*, Timișoara, Al II-lea Forum Internațional: Securitate psihologică, traumă și reziliență
4. World Bank, <http://databank.worldbank.org/data/views/reports>

UNIQUE WAYS OF REGULATION AND SPECIFICS OF EXPRESSING PRE-START EMOTIONS OF A SHOOTER

Elmira Karapetian

*Department of Sports Pedagogy and psychology after A.A. Lalayan,
Armenia, Yerevan*

e-mail: elkarapetyan94@gmail.com

Coordinator: Candidate of Psychological Sciences – Harutyun Babayan

The relevance. The ways of athletes emotional demonstration and expression of emotional tension go differently during the whole process of sports improvement and contests. The promoting or damaging impacts of the environment can lead to the weakening of the shooter's nervous system, to the anxiety, confusion, that affects the competitive results one way or another.

In the shooting, the accurate performance of special exercises, the maintaining the emotional balance and the stability of movements based on the sensual-motional and psycho-motional features during the pre-start phase, occupy a special place. The aim of the research is to explore the features of shooter's expression of emotions in pre-start stage.

The tasks are to diagnose the forms and levels of expression of emotional tension. The methods of research are :

1. The study of the literature
2. Psychological testing: the research of ability to maintain the balance under the conditions of emotional tension, variability of movement rates
3. Instrumental research: "electro-skin resistance measurement", "pulse measurement".
4. Statistic analysis

Organizing of the research. The study was conducted at the pre-competitive and pre-starting period.

Thus, the pre-starting emotional tension is expressed by heart rate changes and points to the adaptation to psychological changes, which occurs based on the conventional reflex mechanism, and provides the effectivity of muscle work.

A special modeled training was held for the research, that maximally included competitive situations and warm up exercises and phases.

At first, the heart beats (polometria) and the degree of emotional tension (electro-skin resistance) were measured immediately before warning-up.

There were examined 40 candidate athletes of RA National team in two age groups (14-18 and 13-22) with 20 athletes each (10 boys, 10 girls). 2 experimental contests were held for each group, including only 10 participants (5 boys and 5 girls) from the groups, who should have been trained to the shooting as usual, keeping all the customs (each participant was using his own custom): one believes in success of "yellow shirt", the second listens to his favorite music, and the third speaks to his arm. The other athletes (the left 10 participants) took part in the shooting contest without any custom.

During the second testing fire, the shooters changed their positions.

After the competition there was another interview to find out and neutralize the negative factors. Only one question was given: "what prevented you from showing a successful performance?"

In the result reasons were quite various:

Due to the failure of the arms just before the competition,

Because of the change in clothes or arms just before the competition,

Due to the charge of two bullets simultaneously or wrong installation.

- Due to the disruption of nearby athlete's arm.
- Because of the failure of target program.
- Because of the deferral of competition start.
- Due to stopping the fire as a result of any circumstances.
- Due to an uncomfortable fire-line (limited space, steep, wooden, slipping floor).
- Due to the change in the rules of the competition, as the athlete learnt it at the last moment.
- Because of the accidental fire, which caused a bad result.

The fact is that these factors can't affect the athlete if he is aware of countering techniques. Otherwise, it's recorded a direct inverse relation between these factors and competitive results.

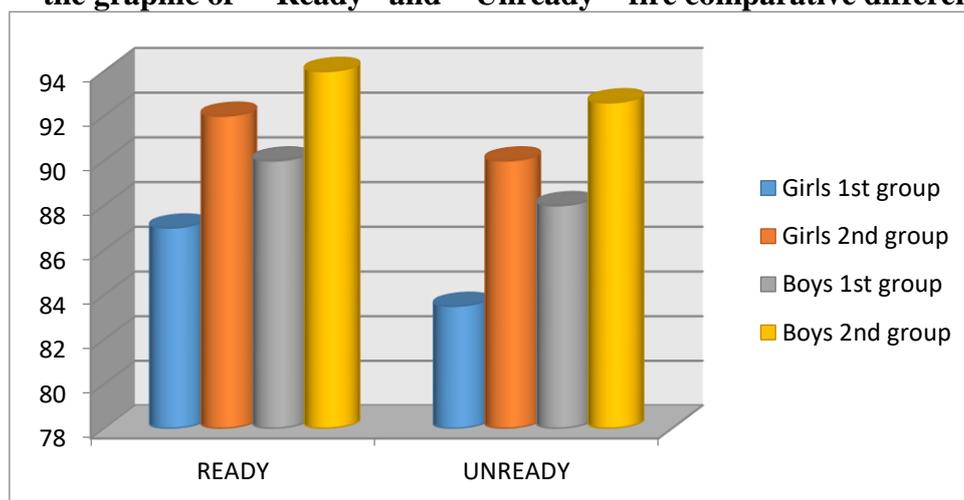
The analysis of the research results show that in the first group the girls' fire, being well-prepared ranged from 40 fires among 400 to 330-336 possible units (an average was 348 which makes the 87 % of the highest possible score), the heart rate was ranged between 75-100, EMD – 200-250- KOM. But with unprepared attitude their results fell to an average of 334 points (83.5 %) heart rate 62-120, EMD-150-190-KOM. The second group girls' results in the prepared state were an average of 368 points (92 %) heart rate 82-93, EMD-210-270KOM, in the unprepared condition, the data was 360units (90%) EMD-160-180-KOM.

The answers to the question what prevented, were similar. Certain preparatory acts are not superstitious, but raise the mood and prepare the body for the better performance. But as it was seen in the example the age and sports experience play a significant role.

According to the analysis of the boys' results it became clear, the boys are less emotional. The average variation of their results was not as great as the girls. In the first group from 60 fires among possible 600 were hit 540 points, (90%) being in prepared state, heart rate 85-105 and in the unprepared condition 532 points (88%) and rates : 78-124. The boys in group II were more experienced. Being prepared 565 points (94%) were hit, the heart rate was 85-98, in unprepared state- 556 (92%) rates 88-121.

Considering the results mentioned above, it becomes clear that in spite of the bigger fluctuations in boys' heart-rates, the boys managed to get mobilized at the beginning of the fire, and to give right instructions to the muscular system. However, it must be noted that the indicators of the emotional intense in this group didn't differ from the previous ones significantly.

the graphic of " Ready" and " Unready " fire comparative difference



Conclusion. Analysis of the results from other scientific researches and our own survey data show that pre-start emotions are unavoidable in the starting phase before the competition, they go in their own way, having very individual character. Management forms are also different, according to athlete's gender, age characteristics as well as the sports experience. The experience shows that the best results are displayed in the optimal level of emotions as a result

of competitive exercises. However, as it was confirmed during the experiments, the expression of the optimal level of emotional tension also carries a highly subjective character.

Bibliography:

1. А.А. Бабаян. “Проблеми психологической подготовки в спорте виших достижений”, Ереван .2007г.- 122с
2. ГогоновЕ.Н., МартъяновБ.И. “Психологияфизическоговоспитанияиспорта”: Учеб. пособие для студ. высш. пед. учеб, заведений. – М.: Издательский центр «Академия», 2000. – 288с.
3. Бабушкин Г.Д. “Психология физического воспитания”. - Омск: СибГАФК, 1998г - 86 с.

THE ROLE OF THE LEADER AND EMOTIONAL EXCHANGE AMONG GROUP MEMBERS

*Radu Roxana Maria Nicoleta
National University of Physical Education and Sports (NUPES)
Bucharest, Romania
e-mail: r.roxanam2@yahoo.ro*

Abstract. This research focuses on the role of a great leader. What it takes to be one and how he manages to have authority without affecting the communication bridge. To be a leader involves a balanced personality, a person who has great abilities like: specific skills and knowledge, great communication skills, authority, competitive spirit, and finally, the ability to lead. The leader is an example for the others, he knows how to motivate others and make them believe in themselves. A leader knows that self-criticism is the way to the leading skills development or self-education. He knows the importance of indulgence and when to be applied without taking away his authority or weakening his leading position. A leader knows that he is a human among humans.

Key words: *leadership, personality, authority, positive emotions.*

The term „Personality” comes from the Latin term of „Person” which means mask or appearance. Meanwhile, the term gained new values, psycho ethical and psycho physical attributes. Boethius (VI-th Century) stated that „*Persona est substantia individua rationalis naturae*” (The person is an individual substance of rational nature). The actual distinction between the terms individual, person, and personality wasn’t established in the VI-th century. Boethius’s definition refers to the human personality which was understood in its rational side, even if there was a preoccupation for the spiritual, religious side of the human being. Today, we understand this definition as one centered on cognition, and the emotional side is unknown, not understood regarding quality and quantity. Today specialists focus on understanding the emotional side of human personality.

Other than gaining new values, the term „Personality” also gained semantic meanings. For example, between sociology and psychology there is a clear difference. Sociology talks about personality as the contribution of each individual in a specific frame which makes him better than his peers; in psychology personality is present in every human being, no matter his contribution to the social community where he is a part of. Personality signifies the absolute manifestation of the human being in the social context. Our interest is focused on the personality of the leader or the captain of a sports team.

The term „Personality” in a broad way, represents the individual who innovated a specific scientific and cultural area, psychologically-wise, personality is a part of each individual no matter what it is the level of self development, the presence of disabilities or mental health problems. We understand that personality is a direct result of the human psychic.

Another definition of personality was developed by H.C Warren and L. Carmichael (1930): „Personality is the entire mental organization of a human being at any stage of his development. It embraces every aspect of human character: intellect, temperament, skill, morality, and every attitude that has been built up in the course of one's life.” We can say that personality cannot be separated from character, the contribution of the originating environment in mental development and all other factors that influence a person’s life. As such, a personality pattern appears, in some ways similar to others, but unique because of this cycle of influence.

One of the main factors that influence personality is the emotional side which is in close connection with the workings with of the human being in rational interactions, such as, the relation between group and leader is shaped by the emotional component and its effects regarding empathy.

The leader is an individual with a fundamental role regarding the group, who acts in sports for the group's interests. At the same time, he represents the group opinion regarding their interest, the purpose of the group actions and means to achieve the group's goal. Although he represents the connections between the group and outside environment, he also is the main channel used by the group members to communicate. The leader represents efficiency, safety but also cohesion or limitation.

The team captain is chosen based on several qualities, but another thing he must possess – the influence, the influence over the players. He must exercise over and over together with the players, in a positive manner for the best results. If a captain does not have influence over his team, he is not the leader. There is a misconception that a person is born as a leader, in fact, some people are born with a special set of skills, but leading is a collection of qualities and know-how's that you acquire by education. The manners in which a team captain can motivate his team in a bad situation could make the difference between win and loss.

Some qualities a team captain should possess are:

CHARACTER: People feel, and discover the type of character other have. A team captain who can gather a group over a common interest will always be a first choice.

KNOWLEDGE: A team captain which has good knowledge about the competition and about the members of his team can help the coach in choosing a tactic regarding a game and this is a huge benefit for the team.

INTUITION: To be a team captain, you must be able to anticipate certain events to be able to better cope with unexpected situations, and ultimately lead the team to victory.

COMMUNICATION: is the most important tool in the sports activity, and not only. Communication is a key for sending clear and precise information and also for taking into consideration the need of the team.

AMBITION: A team leader with great ambition will be able to use it to make words come true, he will demand victory so hard that the team will fight more and more, pushed by its captain's ambition.

We analyze the team captain as a leader for a group of players. The football team, as an example, is a group in which the dynamics are determined by the team captain. He carries the responsibility of the communication between the group members and the exterior or between the group members themselves. The emotional exchange inside the team is both affectionate and social, but also intellectual in the technique and game tactics. The team captain analyzes the game with the coach to adapt the techniques related to the game situation. Both for the leader and for the group members there must be benefits associated to the sports activity: emotional, social, physical, competitive and cognitive. Those benefits bring satisfaction and, in the end, bring the team together.

The leader also has the catalytic role; he's the man of action, which through self-example inspires the others to achieve great things together. The leader, even if he is not the one who inspires the vision and the perspective is provided by the team or by the coach, he is the one who represents it, who shows progress. There are situations in football competitions when the team is down by one goal and it can be discouraged, here is where the team leader is key for keeping the team motivated and on the road to success.

Although the team captain is the symbol, nothing is done without a group effort; the key is a unitary team which can achieve any set of objectives. Teamwork is a fundamental work principle in football because this sport is based on players with a very good technique that can

pun in practice efficient tactics. Between the captain and the team there must be an exchange of advantages , tech team is well represented by the leader and he has great responsibility, in turn the team greatly increases the leaders potential. If an individual can change his objective without feeling responsible for anyone else but himself, where as the leader must always follow the team's objectives of. The objective should be the one that help organizing the team for achieving a certain performance and less about the level of each individual player because, in football, depending on the tactic, some player have the purpose of helping other players in order to win the game. In football, players must always look at the bigger picture, the teams that go big, are the ones in which the players make the team's objectives, their own.

Besides, players with great skills and an efficient leader, the team needs a vision that gives them direction, the players need a reason to sweat, the vision should be progressive, realistic and offer a feeling of satisfaction for every objective accomplished. Also, a major player in team psychology is the attitude, you need gifted player to achieve a victory, but with bad attitudes, you will lose, no matter the amount of skills they have. There is a need for trust inside the team, if a player abandons his post for an offensive play, he must be confident that another player will take over his tasks because football is quite dynamic.

In a team „We don't work one for each other, we work one with the other” –Stanley Gault.

As a closing statement, we add the fact that everything is like a circle: personality is the base of the individual, the leader is the one that leads the group, and the group chooses its own leader.

Bibliography:

1. Golu, M., *Bazele psihologiei generale*, Ed. Universitară, București, 2005
 2. Maxwell, J.C., *Cele 21 de legi supreme ale liderului*, Ed. Amaltea, 2004
- Maxwell, J.C. *Cele 17 legi ale muncii in echipa*, Ed. A

REVIEW ON THE USE OF BLOOD FLOW RESTRICTION TRAINING IN ADULT POPULATION

Ciocîrlan Mihai-Cosmin
National University of Physical Education and Sport,
Bucharest, Romania
e-mail: cosminktmihai@gmail.com

Abstract. In recent years there has been an increase in the number of studies regarding the use of blood flow restriction bands with the purpose of inducing muscle hypertrophy mainly in the upper and lower body extremities.

The main reason why blood flow restriction training is of major interest is the fact that so far the existing literature suggests that through low intensity training (30% 1 RM) using blood flow restriction bands combined with a high repetition range we can induce similar muscle growth response that we usually see when training at higher intensities (70% 1 RM).

I consider this topic relevant for further research due to its applicability in improving physical fitness of sedentary subjects or who are undergoing a recovery process.

Keywords: blood flow restriction; muscle hypertrophy; physical fitness;

Introduction

Blood flow restriction training comes to us as a very interesting alternative to the classical heavy load resistance training, but this approach to training still raises a series of questions that researchers all around the world are trying to understand and answer.

When you first look at the benefits of blood flow restriction training you immediately come across the fact that the subject will have to do a moderate to high volume training using low loads of around 30% of 1RM and reap all the benefits of high load training. So far blood flow restriction training is supposed to increase muscle mass and endurance.

Purpose

The purpose of our review is to answer the following questions regarding blood flow restriction training:

1. How effective is blood flow restriction training compared to unrestricted blood flow training in identical conditions.
2. How effective is blood flow restriction training compared to heavy load resistance training.
3. What is the ideal pressure that should be applied to the muscle and how big should the area of application be.

Research methods

To answer the questions, we searched for the most recent scientific articles about blood restriction training and compared the various results from the experiments we came across.

Results of the research

C. Evans et al. (2010) points out that vascular occlusion during low-load resistance training increases muscle strength and endurance when compared with low-load resistance training alone, a fact also supported by J.P. Loenneke (2012). For the experiment nine healthy males performed low intensity training of the calf muscles, performing four sets of 50 heel raises, 3 times/week for four weeks using a thigh cuff inflated to 150mmHg. They placed the cuff only on the non-dominant leg. The aim of the study was to test if blood restriction training can enhance microvascular filtration capacity. The results pointed out an **increase of 26% of**

calf filtration capacity and an **increase in strength of 18%** in the restricted leg, but no significant increase in the unrestricted leg. They pointed out that the increase in filtration capacity may be due to increased capillarization.

Tomohiro Yasida et al. (2009) examined the muscle activation rate during low-intensity muscle contractions with a moderate restriction of blood flow and complete occlusion of blood flow. The subjects performed unilateral elbow flexion at 20% of 1RM. They recorded the electromyography activity from the surface of the biceps brachii in a series of 3 experiments and pointed out the mean power frequency (MPF) obtained. The results obtained showed a decline in maximal voluntary isometric contraction (MVC) following the contraction that was greater with complete **occlusion (39–48%) than moderate restriction of blood flow (16–19%)** whereas control MVC did not change. The muscle activation was higher in a similar way in both experiment tests compared to the control test. They concluded that moderate restriction of blood flow has similar neural manifestations as complete occlusion of blood flow without impairing MVC as high, which means that low-intensity muscle contractions, with moderate restriction of blood flow, leads to more intense activation of the muscle relative to the external load.

When talking about the optimal volume for blood flow-restricted training,(BFRT) J. Martín-Hernández et al.(2013) concluded that the use of a low volume training is the best approach regarding BFRT. For the low volume BRFT he used the protocol described by Takano et al (2005) Fujita et al (2007) and Yasuda et al(2011), respectively performing 1 set of 30 repetitions followed by 3 sets of 15 repetitions and allowing a rest period of 1 minute and using an intensity of 20% 1RM. For the high volume BFRT the researchers repeated the protocol following a 5 minutes rest. The results showed an increase in muscle thickness of 7.03%for the low volume group and 6.24%for the high volume group in comparison with the control group that did not perform any specific form of training.

Also, in the same study, the researchers performed a comparison test between BFRT and classic high intensity training (HIT) that did 3 sets of 8 repetitions at 85% of 1RM whth 1 minute of rest in between and found out that while BFRT **increased muscle thickness by 7%, HIT increased muscle thickness by 18.86%** compared to the non-training control group.

The ideal pressure to be used in BFRT is considered to be 110 mm/Hg(Takarada et al., 2000; Patterson & Ferguson, 2010). They used an inflatable cuff with a width of 140 mm and a length of 940 mm.

1) *In 2005, Jack A. Loepky et al tested whether BFRT can have a significant impact on muscle endurance in comparison with weight training. The researchers pointed out an improvement of 120% in the endurance test performed compared to the initial control test when using ischemic training an increase of 16% when using light weight exercise during a 6 week exercise protocol.*

Conclusions

After doing our research regarding the effects of BRFT, we came to the following conclusions:

1. BFRT is less effective than HIT by a big margin when it comes to increasing muscle thickness.
2. BFRT can be a very good alternative when situation implies that the subject cannot train with high loads, because it allows significant increases in muscle mass in comparison with the use of an identical load without blood flow occlusion.
3. BFRT has the possibility of increasing muscle endurance.

4. BFRT increases muscle blood filtration mainly due to the fact that it is considered to increase muscle capillarization. We believe that this effect is the main reason why BFRT has shown positive results in increasing muscle endurance.
5. The work volume required to reap the benefits of BFRT is so far considered to be in the form of 4 sets of 30-15-15-15 reps with a maximum of 1 minute of rest between the sets,
6. The relative intensity at which BFRT is performed is in the range of 20-30% of 1 RM and the pressure applied on the muscle area should be of moderate intensity, because high pressure leads to the drop of muscle contraction power at an early phase.
7. We consider BFRT to be of use in fitness development for a wide range of population because we have the advantage of using light weights in the training process. This is why we consider that BFRT can be of real help for people who suffer from injuries of the skeletal system.

References

1. Colin Evans, Steven Vance, and Maggie Brown, 2010 Short-term resistance training with blood flow restriction enhances microvascular filtration capacity of human calf muscles Journal Of Sports Sciences Vol. 28 , pag 999-1007
2. TOMOHIRO YASIDA ET AL. 2009, MUSCLE ACTIVATION DURING LOW-INTENSITY MUSCLE CONTRACTIONS WITH RESTRICTED BLOOD FLOW JOURNAL OF SPORTS SCIENCES VOL. 27 PAGES 479-489
3. Wernbom M, Augustsson J, Raastad T. 2008, Ischemic strength training: a low-load alternative to heavy resistance exercise? Scand J Med Sci Sports. Pg 401
4. J.P. Loenneke, C.A. Fahs, L.M. Rossow, T. Abe, M.G. Bemben, 2012, The anabolic benefits of venous blood flow restriction training may be induced by muscle cell swelling Medical Hypotheses, Volume 78, Issue 1, Pages 151–154
5. J. Martín-Hernández, P. J. Marín, H. Menéndez, C. Ferrero, J. P. Loenneke, A. J. Herrero, 2013, Muscular adaptations after two different volumes of blood flow-restricted training, Scandinavian Journal of Medicine & Science in Sports, Volume 23, Issue 2 April 2013 Pages e114–e120
6. Takano H, Morita T, Iida H, Asada K-I, Kato M, Uno K, Hirose K, Matsumoto A, Takenaka K, Hirata Y, Eto F, Nagai R, Sato Y, Nakajima T. Hemodynamic and hormonal responses to a short-term low-intensity resistance exercise with the reduction of muscle blood flow. Eur J Appl Physiol 2005; 95: 65–73.
7. Takarada Y, Sato Y, Ishii N. Effects of resistance exercise combined with vascular occlusion on muscle function in athletes. Eur J Appl Physiol 2002; 86: 308–314.
8. Takarada Y, Takazawa H, Sato Y, Takebayashi S, Tanaka Y, Ishii N. Effects of resistance exercise combined with moderate vascular occlusion on muscular function in humans. J Appl Physiol 2000; 88: 2097–2106.
9. Takarada Y, Tsuruta T, Ishii N. Cooperative effects of exercise and occlusive stimuli on muscular function in low-intensity resistance exercise with moderate vascular occlusion. Jpn J Physiol 2004; 54: 585–592.
10. Jack A. Loepky et al. 2005, *Effects of ischemic training on leg exercise endurance*
11. JRRD Volume 42 Number 4, Pages 511 — 522

THE EFFECTS OF HIGH VOLUME TRAINING ON BODY COMPOSITION IN ADULT MEN - CASE STUDY

- *Ciocîrlan Mihai-Cosmin*

- *National University of Physical Education and Sport,*

- *Bucharest, Romania*

- *e-mail: cosminktmihai@gmail.com*

Abstract. Muscle hypertrophy is one of the most sought after objective of physical training of men mainly due to the esthetic benefits on the physique. Because we know that training for muscle mass usually requires the use of additional resistance, our purpose of the study is to test the fact that putting emphasis on the total volume of the workout combined with short rest periods and lighter weights can have similar effects to using moderate volume workouts combined with longer rest periods and heavier weights.

In our study we monitored the evolution of an adult male subject following a 6 month strength training program based on a light weight, high volume training and short rest periods.

Keywords: Muscle hypertrophy, high volume training, strength training

Introduction

Muscle hypertrophy is one of the most discussed topic of the XXI century, especially when it comes down to the male population, mainly because of the aesthetic of the body and the self confidence boost, which has a big impact on the overall psychological health of the individual². Secondly, increasing the muscle mass of an individual brings improvements to the overall functional capacity of the body.

Because of the high interest in achieving muscle mass, we believe that a big emphasis should be put on the quality of the training programs of the individual, firstly because we need to reduce injury rates during workouts and secondly we have to look at ways of improving the effects of training programs on the human body.

Purpose

The purpose of our study is to test the efficiency of a customized training program that is aimed at increasing muscle mass in a sedentary adult male subject and to observe the rate at which physical adaptations occur over a period of 24 week period.

Research methods

For our case study we had a male subject with the following initial parameters: age: 24ys; height: 180 cm; weight: 80kg; BMI: 24.7; chest circumference: 85 cm; waist circumference 90cm; hips circumference: 89cm; arm circumference: 28cm; thigh circumference: 41 cm. We performed regular measurements on a monthly basis of this parameters. All the girth measurements were performed using tape measure.

We measured the body composition of the test subject using Tanita WB-380H.

We designed and applied a training program for 24 weeks, with the structure as found in *Table 1*.

During the training, the test subject performed mainly global exercises like squats, deadlifts, pull ups, lunges, bench press, military press, trunk flexion and extension accessory exercises.

² Olivardia, Roberto; Pope Jr., et al. Biceps and Body Image: The Relationship Between Muscularity and Self-Esteem, Depression, and Eating Disorder Symptoms, *Psychology of Men & Masculinity*, Vol 5(2), Jul 2004, 112-120.

The number of sets per exercise performed by the subject were periodized as follows: the first week of the macro cycle, 3 sets per exercise, the second week 4 sets, third week, 5 sets and 3 sets in the fourth week.

Table 1.

Training program structure						
Week	1-4	4-8	8-12	12-16	16-20	20-24
Workout type	Global	Global	Split 2	Split 2	Global	Global
No of workouts	12	12	16	16	12	12
Rest time	120''	60''	120'' active recovery	120'' active recovery	120''	60''

Results of the research

The test subject took part in 87 of the 92 planned workouts over the period of the 24 week study. During the experiment, the subject initial parameters modified as follows:

- The body fat percentage dropped from 19% to 14%;
- The chest perimeter increased from 85 to 95cm;
- The waist perimeter decreased from 90cm to 85 cm;
- The hips perimeter decreased from 89 cm to 84 cm;
- The arm perimeter increased from 28 to 33 cm;
- The thigh perimeter increased from 41 to 44 cm.

The body weight of our subject remained unchanged during the experiment, with only small fluctuations from week to week, but of negligible impact to our overall results.

Table 2.

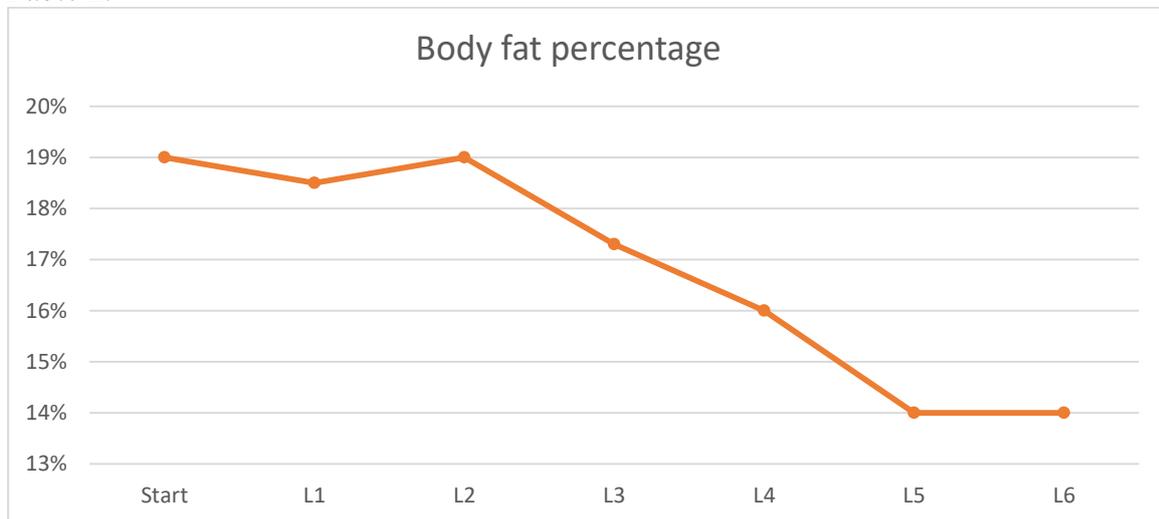


Table 3.

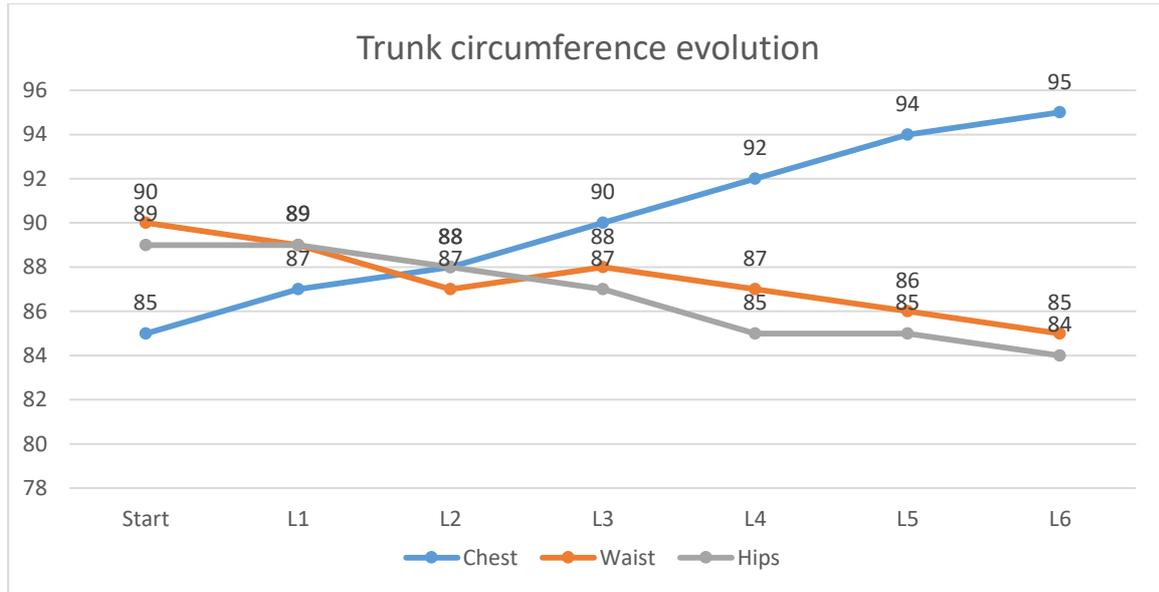
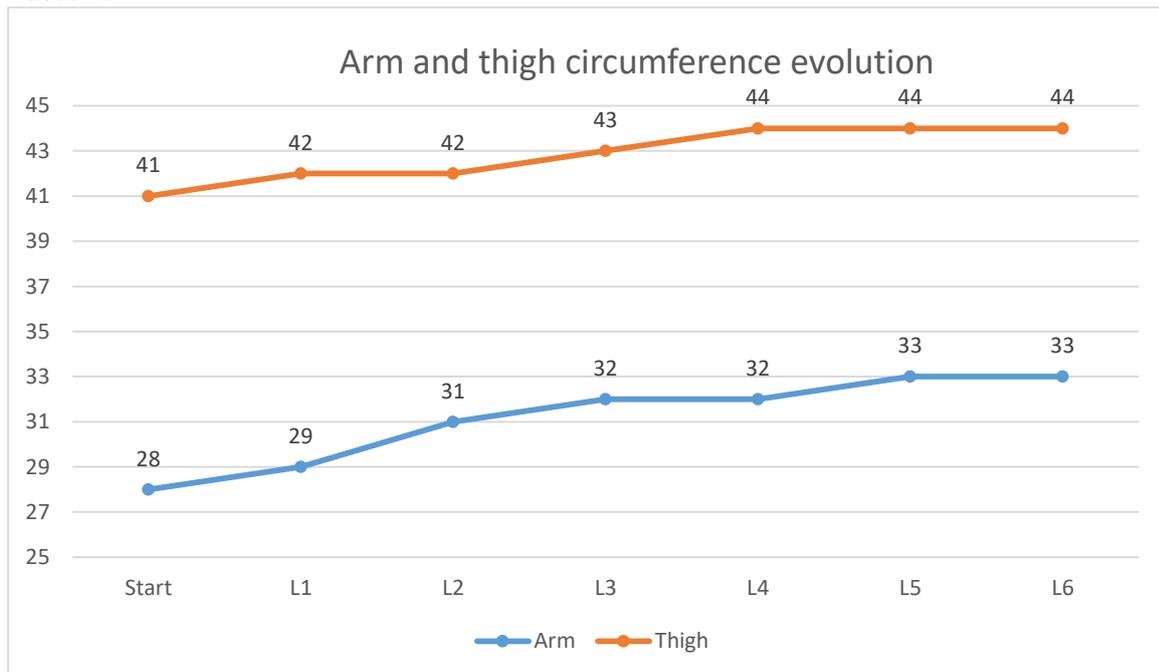


Table 4.



Conclusions

After completing the experiment we can point out that our training program with emphasis on volume managed to increase the test subject's muscle mass and decrease the body fat percentage.

Due to the fact that the weight of our subject remained virtually unchanged during our experiment and the body fat decreased makes us believe that our subject gained roughly 3+/-1 kg of muscle mass.

We believe that by using a high work volume and light weights we can prevent injury occurrence in weight training that is usually associated with the use of heavy weights and poor technique. This approach is especially useful for

List of references

1. Olivardia, Roberto; Pope Jr., et al. Biceps and Body Image: The Relationship Between Muscularity and Self-Esteem, Depression, and Eating Disorder Symptoms, *Psychology of Men & Masculinity*, Vol 5(2), Jul 2004, 112-120.
2. Apostu, M, 2013, *Biochimia Efortului Sportiv*, Editura Discobolul, București;
3. HIDI I.L , 2010, *Metodica Exercițiilor De Dezvoltare Fizică Generală*, Editura Discobolul;
4. Krieger JW, 2010, Single Vs. Multiple Sets Of Resistance Exercise For Muscle Hypertrophy: A Meta-Analysis. *J Strength Cond Res*.
5. Popescu, A.D, 2013, *Fiziologie Și Sisteme De Integrare*, Editura Bren, București;
6. Popescu, A.D, Predescu C.M, 2004, *Fiziologie*, Editura Alexandru 27, București
7. Schoenfeld BJ, Ratamess NA, Peterson MD, Contreras B, Sonmez GT, Alvar BA, 2014, Effects Of Different Volume-Equated Resistance Training Loading Strategies On Muscular Adaptations In Well-Trained Men. *J Strength Cond Res*;
8. Schoenfeld BJ, Wilson JM, Lowery RP, Krieger JW, 2014, Muscular Adaptations in Low-Versus High-Load Resistance Training: A Meta-Analysis. *Eur J Sport Sci*;
9. Symons TB, Sheffield-Moore M, Wolfe RR, Paddon-Jones D, 2009 ,A Moderate Serving of High-Quality Protein Maximally Stimulates Skeletal Muscle Protein Synthesis in Young and Elderly Subjects, *Journal of the American Dietetic Association* 109,pg 1582–1586;
10. Tonson A , Ratel S , Le Fur Y , Cozzone P , Bendahan D, 2008, Effect of maturation on the relationship between muscle size and force production; *Medicine and Science in Sports and Exercise*;
11. Weiss, LW, Coney HD, Clark FC, 2000, Gross Measures Of Exercise-Induced Muscular Hypertrophy. *J Orthop Sports Phys Ther*, pg. 143-148;

THE ROLE AND IMPORTANCE OF THE NEURO-PROPRIOCEPTIVE MEANS IN THE PATHOLOGY OF THE POST TRAUMATIC SHOULDER

~ Case study~

Giurea, I.

„Vasile Alecsandri” University

Bacău, România

Email: ioana.giurea@yahoo.com

1. Introduction in pathology

In the last years there can be noticed an exceptional increase of interest in the traumatic pathology of the shoulder articulation, specific for this region being different types of lesions, which makes diagnosis mistakes to appear as well as difficulties in choosing the best methods of treatment. The scapula-humeral articulation presents large amplitude movements and in many directions, between the articular surfaces (head humeral and ankle) there is a disproportion, surface of the glenoid cavity representing only 1/6 of the surface of the humeral head and has a joint strengthening mechanism weakly represented. (Pasztai Z., 2001).

The morpho-functional particularities of the shoulder joint determine a certain typology of posttraumatic sequelae. Not being a bearing joint and at the same time having a certain coaptation of the joint area completely imperfect, the capsular tendinous and muscular structures get the main role in dysfunctional determinism of the joint. That is why, the degenerative consequence is without any great importance, the vicious consolidation post fracture of the bones cannot prevent the articular function, but a surgical intervention with corrective purpose can launch real catastrophes functionally, affecting the mobility of the shoulder. The dysfunctional sequela of the shoulder does not depend necessarily on the gravity and extent of the lesion, but on the local vasomotor answers and the local and distance neuro-vegetative ones. The first lead the way of the periarticular inflammatory process and the sequela aspect is almost identical with the one of the circulatory and metabolic scapulohumeral peri-arthritis reflexes of the shoulder. (Sbenghe T., 1981)

The shoulder joint does not dispose of a solid ligamentary apparatus, but of only one strong muscular mass, that allows it a great mobility. This composition confers though the disadvantage that it does not resist even minor shocks, especially in elderly people. Consequently, there are pure fractures of the superior extremities of the humerus, associated with the luxation of the shoulder and especially with scapular-humeral luxation. (Baciu D, Rădulescu Al., Niculescu Gh., 1978)

Being a arthrodesis, the acromioclavicular joint presents sliding movements. The biomechanic axis of the joint sliding area is represented by the coracoclavicular extrinsic ligaments that have an important role in the limitation of the sliding of the two bones of the scapular belt, one from another. In the recent traumas of the shoulder, the patient presents the attitude described by Desault with the head inclined towards the traumatised shoulder that is lowered and the arm is towards the chest. (Baciu C., 1981)



Fig. 1. The shoulder joint

2. Materials and methods used

The paper here was approached as a case study, the subject being a male, age 56, diagnosed with: inferior labrum glenoid tear trajectory, partial lesion of supraspinatus tendon, infraspinatus tendinitis and acromial and subacromial bursitis.

The research took place between the 15th of October 2016 – the 1st of February 2017 at the home of the patient.

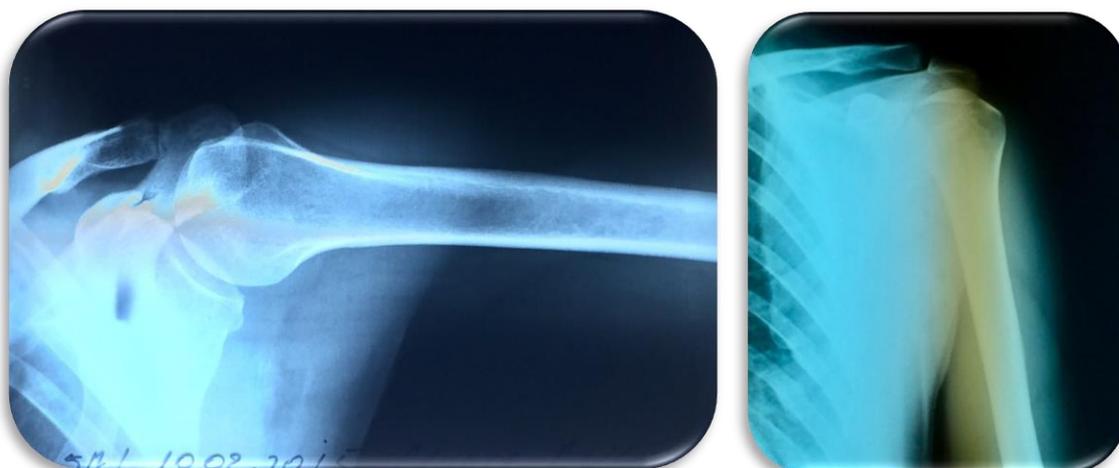
The research hypothesis for made in this way: it is presumed that through the correct selection and explanation of the neuro-proprioceptive means we can obtain an efficient recovery of the shoulder functionality.

The research methods used with the purpose of checking the formulated hypothesis were:

- The bibliographic study method;
- The observation method;
- The investigation method;
- The case study;
- The measurement and evaluation method;
 - Anamnesis;
 - The radiographic exam;
 - The objective and subjective clinic functional exams;
 - The joint balance;
 - Specific functional exams:
 - Load and Shift Test;
 - The Apprehension Test;
 - The Painful Arc Test;
 - Rockwood Test;
 - Dugas Test;
 - Jerk Test;
 - Neer Test;
 - Hawkins Test;
- The presentation and interpretation of the data method.

3. The development of the research

Starting by presenting the result of the radiographic exam which the patient came with:



Following there are presented the clinico functional evaluation files of the patient:

Anamnesis:

Surname and name	A.M.
Age	56
Gender	M
Occupation/the practised sport	- / tennis, horse-riding
Clinical diagnosis	Left shoulder: Inferior glenoid labrum tear, Partial lesion of the supraspinatus tendon, Infraspinatus tendinitis, Subacromial and subcoracoid bursitis
Date of evaluation	26th of November 2016
Name of the examiner	GIUREA IOANA
Conditions of examination:	Chronic phase
ILLNESS HISTORY	
Causes	Defectuous position while working, the strikes from playing tennis, lifting weights.
Age and evolution of the illness	Installed in 2005, ammeliorated partially over time using different treatments, but has always relapsed.
Way of prevention	Rest, anti-inflammatory, kinetoterapeutic treatments, etc.
HISTORY	
Personal	Long kyphotic attitude, slightly flexed position of the head and neck, forward oriented shoulders, basculated scapulas, round back. Also, kyphotic attitude in C, through the lateral deviation towards the right of the spine.
Physiological	Hipertension
Pathological	No
Heredocolaterale	Gout.
MEDICAMENTATION	
Specific – to the illness in course	Anti-inflammatory
Unspecific – associated affections	No
SUBJECTIVE EXAM	
Visual exam:	
1.Local modifications of the form (articular deformations, edemas, milkleg, vicious positions or compensatory positions of the body segments);	The head and neck present and caudal inclination towards the right, that can be observed on the tragus line and in the trunk formed by this with menton. The biacromial line is oblique, cranial oriented towards the left. The scapulae, due

	to the kyphotic attitude, are basculated, the right being situated upper than the left one. From the frontal plane, the left elbow is positioned higher than the right, and from the sagittal plane, the right elbow is lower and slightly internally oriented. The left arm is slightly flexed and positioned higher than the right in a slight abduction. In the transversal plane, the line that should meet perpendicularly the menton with the xiphoid appendix and the umbilic is enclined towards the left. The waist is projected forward due to the kyphosis and presents also a strong lordotic curve towards the right. The oblique bicrete line is lifted from the right hip up. The iliac fossa is raised the right hip up. The iliac fossae are asymmetric, the right being higher. The right inferior member is flexed and rotated slightly to the exterior.
2.Size modifications	The left superior trapese is extremely contracted, as well as the rest of the back muscles of the left side due to the kypho-lordotic position.
3.Local colour modifications	No.
Pain evaluation:	
1. Brink and perception of pain	High to very high on abduction movement of the left arm.
2.Type of pain	Mialgic, nevalgic, but especially causilgic at the movement described previously.
3.Scale of pain	8
4. Sensation of pain	Pressure, twinge, junghi, cracking sensation of the joints.
5. Bioritmicity	During movements (segmentary).
6. Associated phenomenon:	
- motor (paresis, paralysis, contractions, antalgic positions);	Antalgic positions.
- sensitivity (hipo/hiperestesia);	Hiperestesia.
- psychic (anxiety, depression, behaviour disruptions).	Tendency of avoiding movements of imposing abduction.
OBJECTIVE EXAM	
Palpable exam: it does not present pain or sensitivity	

Articular balance sheet:

Movements:		Flexions	Extension	Abduction	Abduction	External Rotation	Internal Rotation	Horizontal abduction	Horizontal Adduction
Testing:	Normal values:	160°-180°	45°-60°	170°-180°	90°	80°-90°	80°-90°	130°	130°-140°
Initial	Patient values:	92°	50°	77°	90°	52°	90°	103°	126°
Intermediate		110°	50°	93°	90°	61°	90°	110°	130°
Final		135°	50°	108°	90°	74°	90°	118°	130°

Muscular balance sheet:

	Movements:	Flexion	Extension	Abduction	Adduction	External rotation	Internal rotation	Horizontal abduction	Horizontal adduction	Scapular lift	Scapular drop	Scapular abduction	Scapular adduction
Testing:	Normal values:	F5	F5	F5	F5	F5	F5	F5	F5	F5	F5	F5	F5
Initial	Patient values:	F5	F4	F3 +	F5	F5	F5	F4 -	F5	F5	F5	F5	F5
Intermediary		F5	F4	F3 +	F5	F5	F5	F4 -	F5	F5	F5	F5	F5
Final		F5	F5	F4 +	F5	F5	F5	F4 +	F5	F5	F5	F5	F5



Specific functional tests:

Testing:	Load&Shift Test	Apprehension Test	The pain arc	Rochwood Test	Dugas Test	Jerk Test	Neer Test	Hawkings Test
Initial	-	+	+	+	-	-	-	-
Intermediary	-	+	-	+	-	-	-	-
Final	-	+	-	-	-	-	-	-

The functional diagnosis following the tests presented previously revealed the following aspects:

1. Presence of pain and inflammatory process;
2. Following the articular test it was noticed pain and the reduction of mobility on the following movements: flexion, abduction, horizontal abduction and external rotation;
3. Presence of muscular contractions on the following movements: extension, abduction and horizontal abduction;
4. Diminuation of the muscular force;
5. Following the somatoscopic exam the following were observed:
 - Long kyphotic attitude (head and neck projection to the front, abducted shoulder, bascular blade-bones, round back);
 - Scoliotic attitude in C (lateral deviation of the spine towards to the right);

The recuperation objectives will be the following:

- Ameliorating the pain and the inflammation;
- Correction of the vicious posture and the conscious control of the correct posture of the body;
- Growing and replenishing the articular mobility;
- Maintaining the muscular tonus;
- Combating misbalances of the muscle ligamentary, toning the long musculature in the shortening regime and toning the shortened musculature in the elongation regime;
- Growing and maintaining the articular stability at the scapulo-humeral level;
- Improving the respiratory function (reducing the degree of dyspnoea);
- Integrating new corrected positions and the lack of pain in the daily life.

To achieve the enumerated objectives we used a recovery program based of facilitating techniques. These are shared in three stages.

Firstly for the first objectives and they are: the increase of the movement amplitude, the mobility and stability. In this sense we developed the next work scheme:

Rhythmic initiation (RI) to diminuate the muscular contractions, working strictly passive for muscular relaxation; → then we cross to **Slow Inversion (SI)** working without isotonic and concentration pause on agonist and antagonist; → crossing then to the **Relaxation-Opposition (OR)**, specific to the associated cases with pain and diminuation of the movement amplitude, working on the isometric specificity; → the following technique is the **Relaxation-Contraction (CR)** that combines the isometric work with the isotonic, obtaining very good



results exactly on cases like mine of reduced mobility on a certain joint; the next associated technique was the **Rhythmic Rotation (RR)** when we used passive restraining to unlock the scapulo-humeral joint; and this scheme that was closed with the technique of **Rhythmic Stability (RS)**, to place isometric and isotonic that we achieved through the other techniques, in the open kinetic row, with a progressive load.

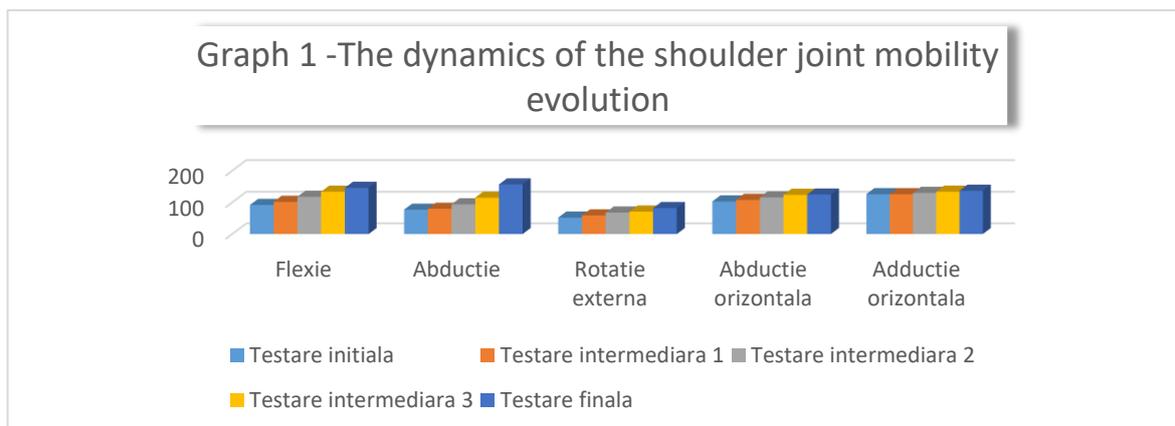
After a period of approximately 2-3 weeks of repeating with a frequency of 2-3 times a week, for 45-50 minutes, we introduced the second scheme of techniques of facilitation meant to achieve the next objective of increasing the muscular force and stability. This presents the next sequences:

Slow Opposing Inversion (SOI), that works on the same principle as SI only if at the end of the movement course(that will always to start in the direction of the weak musculature) → that will apply the isometric contraction, a resistance that the patient must maintain; → We continued with the **Strengthening Sequencing (SS)** trying to irradiate the nerve influx applied on the area with a component closely weaker to begin to facilitate to the activity of that; the following technique was the **Agonistic Inversion (AI)** that we used though with great care to the diagnosis of the patient that implies that although with some tear and lesion to the tendon that we could not be sure was fully recovered, and we did not want to risk it through stretch – reflex; the next step ~~was~~ the facilitating technique called **Isometric contraction in the shortened area (ICA)** that was executed through the whole moving direction regarding regaining co-contraction in the unloaded situation, and ~~ended~~ this scheme with the **Alternative Isometrics (AIz)** executing isometric on agonists and antagonists without changing the hand position and without any breaks between contractions.

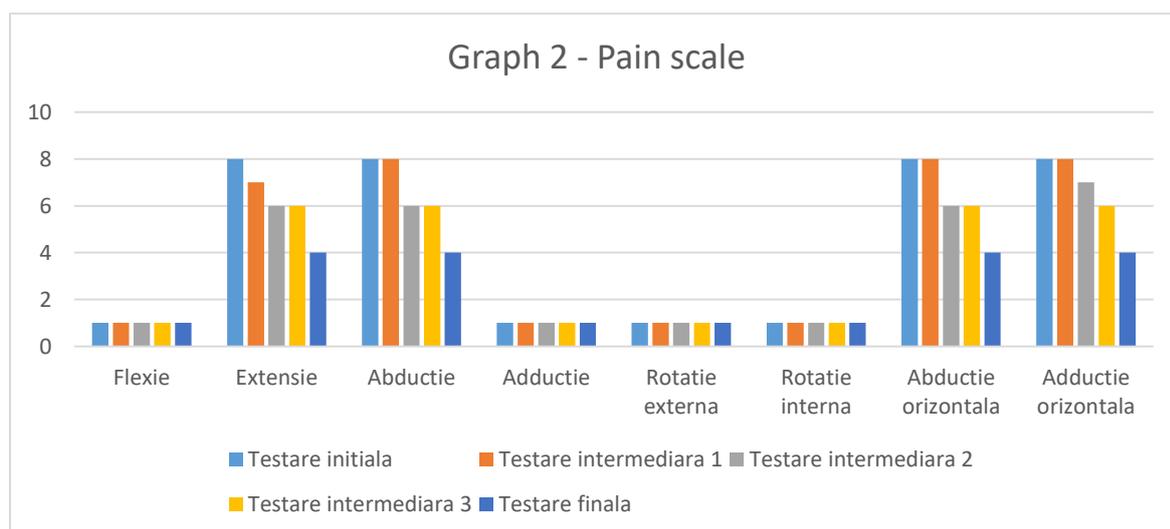
After other 2 weeks of applying this scheme we started to introduce the work on Kabat diagonals on the affected superior member, using in this way the varied proprioceptive stimuli in voluntary executing this time the contraction of maximum contraction under maximal resistance, until the limit of the patient was reached.



4. Presentation and interpretation of the results



Following the use of the presented program and the functional tests we are able to present the results:



In the first graph there was a favourable evolution on flexion movement, abduction, extreme rotation, abduction and horizontal abduction. And from the second graph we can notice a reduction of the pain in the movements of: extension, abduction, abduction and horizontal abduction, movements that were the most painful for our patient.

5. Conclusions

Following the elaboration and implementation of the kinesiotherapeutic program based on the neuro-proprioceptive re-education techniques we can elaborate the following conclusions:

1. After the first step we concluded a significant amelioration of the inflammatory process and pain. Also, in this context, the recovery of mobility and the articular work on movements in the sagittal and frontal plans (flexion, extension, abduction and adduction) there was considerably enhanced, allowing the functionality of the shoulder joint in the daily activities, without any loading;

2. After the second step there was noticed an improvement of the muscular force in the problematic joints; scapulo-humeral and scapulo-toracic. We noticed also a control of the position of the head, neck and chest(the superior part). This this allowed the diminuation of the muscle contractions in these areas.
3. Following the applying the kinetotherapeutic means in the third step and the work on the Kabat diagonals we could notice an improvement of the stability, balance and coordination of the scapulo-humeral belt. Also, all these allowed the patient to actively participate and with loading during the daily physical activities and going back to the sports activity (tennis).

The final conclusion is represented by the confirmation of the previously formulated hypothesis, being able to affirm that the neuro-proprioceptive means help and are efficient in the recovery of the posttraumatic shoulder.

6. Bibliographic references

1. Manole L. – „Metode si tehnici de reeducare neuromotorie”, course, 2009-2010
2. Sbenghe T. – „, Recuperarea medicala a sechelelor posttraumatice ale membrelor”, Ed. Medicala, Bucharest, 1981
3. Balint T., Diaconu I., Moise A. – „,Evaluarea aparatului locomotor”, Ed. Tehnopress, Iasi, 2007
4. Robanescu N. – „,Reeducare neuromotorie”, Ed. Medicala, Bucharest, 1968
5. Ionescu A. – „,Gimnastica articulara”, Cultural Press of Sport, 1954
6. Baciu C. – „, Aparatul locomotor (anatomie functionala, biomecanica, semiologie clinica, diagnostic diferentiat), Ed. Medica, Bucharest, 1981
7. Zaharia C. – „,Elemente de patologie ale aparatului locomotor”, Ed. Paideia, Bucharest, 1994.
8. www.scribd.ro
9. Visible Body Softs

TREATMENT OF CERVICAL SPONDYLOSIS USING PHYSIO AND ELECTROTHERAPY MODALITIES~ CASE STUDY~

Giurea, I.
„Vasile Alecsandri” University
Bacău, România
e-mail: ioana.giurea@yahoo.com

1. Introduction in pathology

Cervical spondylosis represents an arthritis localised at the level of anatomic elements from the cervical region of the spine and manifests itself through the limitation of head movements and through pain that can irradiate in the scapular areas down to the level of the hands.

The word *scoliosis* does not define a pathological unity (gr. Scolios = twisting), but it indicates a lateral deviation of the spine. (Birtolon et al., 1978). The scolioses that can be corrected are named scoliotic attitudes (Ard. Ionescu), scoliotic curvature, scoliotic postures (Ernest W. Johnson), and those that do not correct and present morphostructural modifications are scoliosis. The scolioses of which aetiology cannot be named are defined as being idiopathic, while the evolutionary scolioses are named scoliotic disorders.

Cervical spondylosis interests mainly the cervical disks C5-6-C6-7, being frequently asymptomatic and presenting a slight indolent limitation with the possibility of some discrete pain appearing while moving the neck and/or limitation of the lateral mobility.

It expresses itself through pain in the lateral inferior cervical area and the superior member. Sometimes, it does not represent more than the initial state in the evolution of cervicobrachial algic neuropathy (Câmpeanu E, Șerban M, Dumitru E.,1980). The profound sympathetic cervical syndrome (Barré-Liéou) manifests as the Arnold's neuralgia, through pain in the nuchal and occipital area, based on cervical arthritis. In this syndrome, another observation is that also symptoms of *intermittent vertebrobasilar ischemia*: dizziness, auricular noise, eye blurriness, etc. (Șoflea, AL., 1967). At the rotation movement (with extension of the head), cervical osteophytes compresses the heterolateral vertebral artery, reducing its debit of perfusion through *the angiospastic effect* (the irritation of the posterior cervical sympathetic) and/or through the *mechanical effect* (the enclosing of the arterial lumen), (Bärtschi-Rochaix W., 1968).

Primele simptome ale compresiunii cervicale superioare sunt de ordin subiectiv, bolnavii acuză dureri localizate în regiunea cervico-occipitală, care se exacerbează la mișcările capului. Examenul obiectiv decelează zone de hipo- sau anestezie subleziională la 70-80 % dintre bolnavi și tulburări de sensibilitate în teritoriul cutanat al ramurii oftalmice. Apoi se dezvoltă o pareză sau o paralizie de plex brahial, care numai în cazuri excepționale poate fi bilaterală. (Câmpeanu E, Șerban M, Dumitru E.,1980)

The first symptoms of the superior cervical compression are of the subjective manner the patients confess pain localised in the cervical occipital region that exacerbates at the movement of the head. The objective examination reveals areas of hypo or under lesion anaesthesia at 70-80% of the patients and sensibility variations in the cutaneous area of the ophthalmic branch. Then there is developed a paresis or a paralysis of the brachial plexus that only in exceptional cases can be bilateral.

The prolonged time spent on the chair (in front of the computer) while adopting a vicious position for the cervical spine with the head flexed for a long time, sudden and repetitive movements of the cervical spine that force the spine not physiological during the development of professional activities are just some of the causes of this upsetting affliction. The chronic over solicitation of the muscles and joints in the cervical region, in the leisure time or during the professional act, determines the compression of the sensitive nervous structures with the appearance of different clinic syndromes such as:

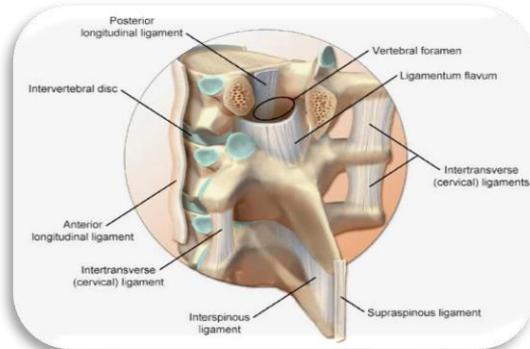
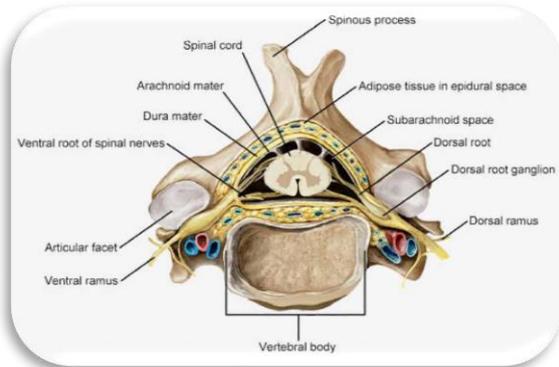
1. radicular syndromes –cervical-brachial neuralgia;

2. the irritation of the posterior cervical sympathetic;
3. the vertebra-basilar circulation insufficiency syndrome;
4. the medullar compression syndrome.

Sedentarism, the occupational traumas, exposure to low temperatures and draft, obesity and an incorrect body position for long periods of time are factors that reduce the paravertebral tonus of the muscles, the circulation and local metabolism at the level of the joint cartilages, provoking the sclerosis of the intervertebral discs and the degeneration of the vertebrae.

The whole weight of the conscious physical overloading and especially the unconscious spiritual and psychic fall on the intervertebral discs. Any profession that solicits for a long period of time the cervical spine in a kyphotic position predisposes to cervical spondylosis. The kyphotic position, with the head bent further on, is met in dactylographers, pupils, students, writers, teachers, surgeons, workers in high precision in the electronical industry, tailors, etc. The continuity of the position with the head bent forward provokes tiredness of the back of the head's muscles, and in time the disc dehydrates. This becomes flat and loses its elasticity, and the vertebrae come closer to one another compressing the nerve roots that give neuralgic pain. The harmonisation of the shocks during the neck movements, no longer can be realised but the intervertebral discs, and the forces exerted here are transmitted directly and brutally to the vertebral plateaus, these swelling and protecting the osteophytes.

Osteophytes represent the result of some protective mechanisms and in some situations reduce the displacement of the vertebrae, blocking to some extent, the narrowing of the intervertebral space. The osteophyte does not represent the primary element of the cervical degenerative lesion. It appears in the reparatory phenomena, being the consequence of the discal over-solicitation. So, the osteophyte plays a role in launching some painful symptoms, especially if its position is posterior. The osteophytes placed anterior do not provoke any painful symptoms.



Cervical ↑nnervation



Cervical ↑Spine



Cervical ↑Plexus

2. Motivating the choice of theme

Also the incidence and recovery of cervical spondylosis is becoming more and more common nowadays, the paper here has the advantage of presenting a patient that only at the age of 46 has discovered this deviation and has not followed until the present time any sort of treatment for this purpose. That is why there can be seen very eloquent exactly the effects of the physiotherapy and electrotherapy over the symptoms and the evolution of the patient from one session to another.

3. Objectives

- Defeating the pain;
- Fight stiffness and retractions;
- Stabilising the process of arthritis;
- Regaining mobility of the vertebral spine;
- Promoting exercises of ablation of the spine
- Harmonising the physiological curves;
- Toning the paravertebral musculature;
- Creating a hygienic and ergonomic behaviour to protect the spine, preventing the degenerative processes' progress and the appearance of acute spikes.

4. Research methods: Anamnesis

Name: G. N.

Date of birth: 25th of April 1961

Profession: Inginer

Clinic diagnosis: Cervical spondylosis followed by cervical discarthrosis C5-C6 and osteophytes

Investigations: Cervical radiography

Anterior treatments: pills and creams with temporary amelioration of the pain

Date of presentation in the medical office: 23rd of March 2017

Location of the treatment: "Spinal Care" Medical office Bacău

The pacient accuses pain at the level of the spine for about a month, getting stronger in the last two weeks. The pain is of a high intensity, intermittent and irradiating to the left superior member, followed by paraesthesia, headache and vertigo. The pain is increasing in intensity in the evening and throughout the day, with extension to the head, at rotation and lateral inclination, predominantely on the left side. The pain is lower in intensity in the the morning , in dorsal decubitus and during the flexing of the head. The scale of the pain in the moment of arriving in the cabinet was of 8 in intensity(10 being the maximum).



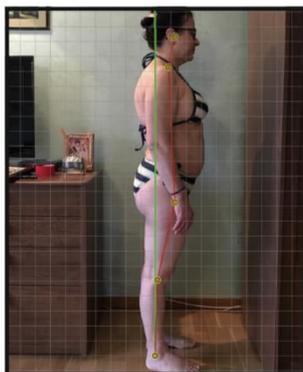
Exam for

performed on 16/04/2017

Anterior View



Right Lateral View



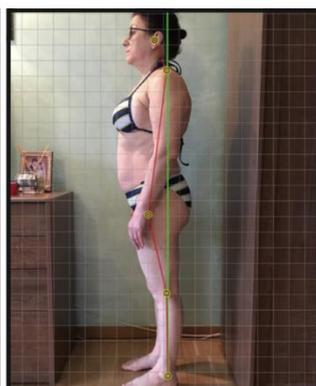
Posture Displacements

Body Region	Anterior Translation	Anterior Angulation	Lateral Translation	Lateral Angulations
Head	0.96cm left	3.1° right	2.25cm anterior	10.15° flexed
Shoulder	0.17cm right	0°	2.65cm posterior	2.72° extended
Ribcage	1.01cm right	n/a	n/a	n/a
Hip/Pelvis	1.69cm left	1.1° right	7.21cm anterior	12.70° flexed
Knee	n/a	n/a	0.89cm anterior	1.64° flexed
Total	3.84cm	4.2°	13.01cm	27.2°

Posterior View



Left Lateral View



Posture Displacements

Body Region	Posterior Translation	Posterior Angulation	Lateral Translation	Lateral Angulations
Head	0.12cm left	2.8° right	4.79cm anterior	21.80° flexed
Shoulder	0.02cm right	1.3° right	7.39cm posterior	7.36° extended
Ribcage	0.70cm left	n/a	n/a	n/a
Hip/Pelvis	2.82cm right	0°	7.15cm anterior	12.88° flexed
Knee	n/a	n/a	0.50cm anterior	0°
T1-T4	0.03cm right	0°	n/a	n/a
T4-T8	0.50cm left	2.6° left	n/a	n/a
T8-T12	0.46cm left	2.3° left	n/a	n/a
T12-L3	0.70cm right	7.8° right	n/a	n/a
L3-Mid PSIS	2.02cm right	12.5° left	n/a	n/a
Total	7.36cm	29.3°	19.83cm	42.0°

5. The result of the research

Session no.1 – 23rd of March 2017:

- Electrostimulation with low frequency voltage in the cervical area, 10 minutes, intensity 9,4 mA peak. (Fig. 3 and 5);
- Laser analgesic program in the cervical area, dose 4.00 J/cm², duty factor 80%, frequency 10.0 Hz, area 2.40 cm², power 40 mW, time 5 min. (Fig. 2 and 4);
- Shockwave 2000, 22B, 15 Nz (Fig. 6);
- Manipulations of the cervical area.

SEDINTA 1 / DATA 23.03.2017		Evolutie
Tratament propus		
Elec.	lens cervical	T.A:
SW		130/15
Mas.		mmHg
Laser	analgesia cervical	

Fig. 1



Fig. 2

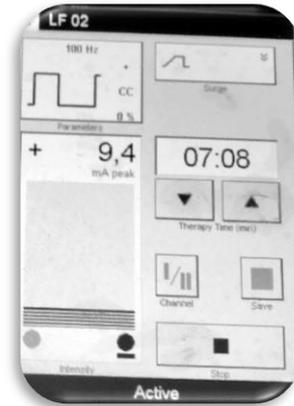


Fig.

3



Fig. 4



Fig. 5



Fig. 6

Session nr.2 – 27th of March 2017:

The patient feels better comparing to the first session, the pain decreased in intensity.

- Electrostimulation with lower frequency voltage in the cervical area, 10 minutes, intensity 9,4 mA peak;
- Laser analgesic program in the cervical area, dose 4.00 J/cm², duty factor 80%, frequency 10.0 Hz, area 2.40 cm², power 40 mW, time 5 min;
- Shockwave 2000, 22B, 15 Nz;
- Myofascial massage in the cervical area;
- Manipulation of the cervical area.

Session no.3 – 30th of March 2017:

- Electrostimulation with low frequency voltage in the cervical area, 10 minutes, intensity 9,4 mA peak;

- Laser analgesic program in the cervical area, dose 4.00 J/cm², duty factor 80%, frequency 10.0 Hz, area 2.40 cm², power 40 mW, time 5 min;
- Shockwave 2000, 22B, 15 Nz;
- Myofascial massage in the cervical area;
- Manipulation of the cervical and toracic area;
- Cryotherapy (Fig. 8 and 9);
- Ultrasound, 0.6 m cervical (Fig. 7).



Fig. 7



Fig. 8



Fig. 9

Fig. 10 Treatment record card

6. Conclusions

The patient feels much better and the cervical area and the paresthesias in the left superior member are much more rare.

If when she presented herself to treatment the patient accused paresthesias of the left

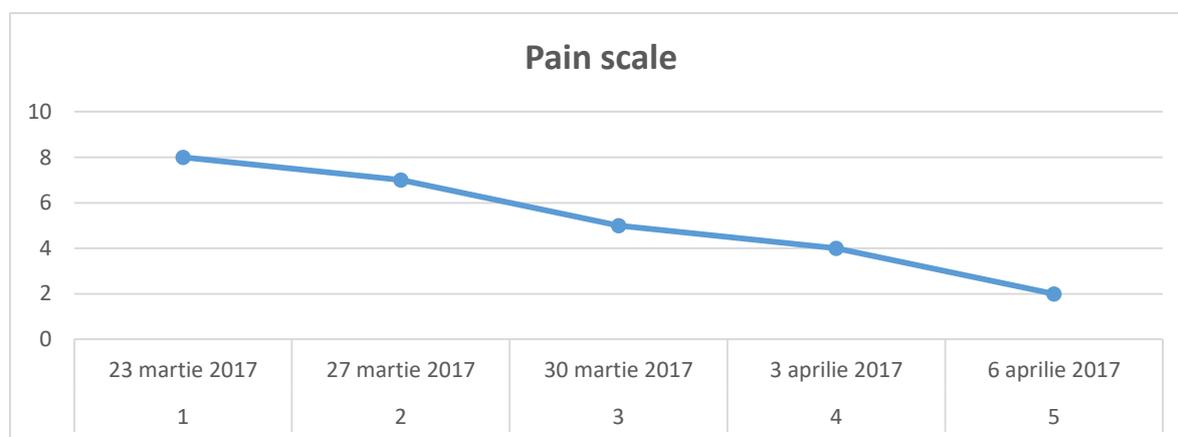
SEDINTA 1./DATA 23.03.2017		SEDINTA 2./DATA 27.03.17		SEDINTA 3./DATA 30.03	
Tratament propus	Evoluție	Tratament propus	Evoluție	Tratament propus	Evoluție
Elec. tens cervical	T.A: 130/85	— u —	T.A: 120/85	US 0,6m cervical	T.A: 130/80
SW 2000 22B; 15 Nz	multg	— u —	multg		
Mas. cervical		— u —	Pacienta se simte mult bine fata de nel-trec		Pacienta nu simte mai bine fata de nel-trec
Laser analgesic cervical			de nel-trec trece!		Pacienta nu simte mai bine fata de nel-trec
TM cervical			si mai bine fata de nel-trec		Pacienta nu simte mai bine fata de nel-trec
Crio Nu					
Trac. Nu					
GM Myofascial cervical			si mai bine fata de nel-trec		Pacienta nu simte mai bine fata de nel-trec

superior member, these have now disappeared as well as the cefalea, the skull pressure and the vertigo states.

The pain scale had a descending evolution according to the graph presented below:

Session	Date	Pain scale
1	23rd of March 2017	8
2	27th of March 2017	7

3	30th of March 2017	5
4	3rd of April 2017	4
5	6th of April 2017	2



7. Bibliographic references:

1. Tudor S Benghe, - "KINETOLOGIE PROFILACTICĂ, TERAPEUTICĂ ȘI DE RECUPERARE", Ed. Medicală Bucharest 1987;
2. Elena Luminița Sidenco -"ELECTROTHERAPIE", Universitatea Spiru Haret, Facultatea de Educație Fizică și Sport, Specializarea Kinetoterapie;
3. "CURS DE RECUPERARE, MEDICINĂ FIZICĂ ȘI BALNEOLOGIE" – Universitatea de Medicină și Farmacie "Victor Babeș", Timișoara 2006.
4. Birtolon Ștefan A. – "Exercițiul fizic și coloana vertebrală", Editura Sport-Turism, Bucharest, 1978.
5. Câmpeanu E., Serban M, Dumitru E. – "Neurologie clinică", Editura Dacia Cluj-Napoca, vol. II & III, 1980.
6. Images

Anatomy & Physiology

VISIBLE BODY[®]
3.0.15

and

 **PostureScreen Mobile**[™]
Accurate Postural Assessment

THE EFFECTIVENESS OF APPLYING THE NEURO- PROPRIOCEPTIVE FACILITY TECHNIQUES IN THE RECOVERY OF ANKLE FRACTURES

Morari Maria,

S.U.P.E.S

Chisinau, Moldova

Coordinator: Zavalışca Aurica, university associate professor,

Abstract: Human foot is an organ of support and walking that must support the entire weight. For the fractured ankle it is important the early application of physical therapy for preventing the emergence of complications that can lead to changes in kinetic ankle with joint degeneration. Using neuro-proprioceptive techniques contribute to speeding up the recovery process.

Keywords: fracture, ankle, recovery, neuro-proprioceptive facility techniques (NPF).

Actuality. Posttraumatic stiffness of the ankle and foot causes functional disability that especially is manifested in riding over rough terrain. Recovery of flexion, extension in talocrural joint, can be achieved in so far as the anatomical joint forces and relations are complied with.

The ankle joint is made up of the tibia, fibula and talus, and everything that is outside this area covers the concept of foot. There are examined the ankle flexion movements - extension and the ones that allow the eversion and inversion of the foot [1,2]. The most common symptoms are: immediate pain and severe pain on palpation, bulking diffuse walking unable to support the foot, ankle deformity.

Joint ankle joint is difficult to recover, requires time and patience to achieve good results. Even if sometimes it cannot be achieved the complete recovery of talocrural joint function and complete recovery angles or useful sectors movement is not always possible, using the right methods, techniques and means kinetic or passive motion, passive-active, active, active resistance, techniques for facilitating neuro-proprioceptive, the physically aids may reach a satisfactory result [3,4]. At the same time, here is important the multidisciplinary team consisting of: rehabilitation physician, physical therapist, surgeon, orthopaedist, physiotherapist, occupational therapist, each with its goals and objectives. It is important to apply as early treatment for prevention of complications such as vicious consolidation, which can lead to changes in kinetic ankle joint degeneration

Rehabilitation of ankle mobility is possible in most patients but it is necessary that they meet the guidelines physiotherapist and execute the proposed exercises both during hospitalization and individual at home [5].

Research organization:

Within the scope and objectives proposed in the given research it was conducted the pedagogic study. Thanks to their practical experiments it was demonstrated the possibility of patients' recovery with ankle fracture by FNP means and techniques.

The study was conducted at the state enterprise "Republican Experimental Center for Prosthesis, Orthopedics and Rehabilitation". Following this study it was demonstrated the results and kineotherapy role in the recovery process of ankle fracture. Physical therapy program was applied to a group of 5 people, of 46-57 years old, diagnosed with a fractured ankle postoperative recovery in the third period.

Research objectives

- Analysis of the literature for selecting the most effective methods of recovery of the ankle fracture;

- Analysis of the anatomy, physiology and biomechanics elements of the talocrural joint;
- Analysis and selection of neuro-proprioceptive facilitating techniques;
- Selection of the most effective methods for physical therapy recovering of ankle fracture;
- Develop a set of exercises that can be applied in the recovery of ankle fracture;

The means of using the physical therapy in the case of a fractured ankle: exercise; natural factors; curative massage; locomotor system. Also depending on the period of recovery and individual capacities and functional characteristics of the patient can be: active mobilizing, active resistance, passive and passive-active techniques for proprioceptive neuromuscular facilitating (PNF), Kabat method, various help methods, curative massage.

Joint mobility assessment was performed using goniometry. Goniometry allows us to appreciate both the functional deficit before applying therapist program and after completion of recovery sessions. All results are reflected in Tables 1, 2 and 3 shows the results. The study examined the following motion: plantar flexion of the ankle movement back foot in the sagittal plane, the amplitude of movement between 0 and 40-45 degrees dorsal flexion of the ankle and forefoot movement in a sagittal plane, the amplitude of movement between 0 and 20 degrees. Following the goniometric examination we have found the following:

Thus, after examination of the subjects' elbow, we propose the following program for recovery therapist ankle fracture with the following objectives: ensuring mobility for surgery scar; improvement of callus consolidation; prevention of joint contractures and muscle; restore functions affected limb; regaining range of motion; regaining muscle strength and endurance; restore correct walking.

Table 1. The results of goniometric exam

Name, surname	Age	Sex	Dorsal flexion	Plantar flexion
A.A.	46 years	Male	7°	25°
C.G.	50 years	Male	10°	30°
G.N.	57 years	Female	13°	29°
M.I.	49 years	Male	6°	15°
R.S.	55 years	Female	11°	27°
x	51,4years		9,4°	25,5°

Preparatory part:

1. Initial position - dorsal decubitus, both legs on a roll, the therapist performs passive mobilization in the affected limb, the patient tries to relax. First the therapist performs movements of flexion, extension and then makes circular movements both indoors and outdoors. Return to the initial position. Duration / number of times: 23 minutes. Information Methods: the practitioner will be careful to the patient's response; the mobilization is done within the limits of pain.

2. Initial position - ventral decubitus, the affected leg flexed at 90 degrees, the therapist performs passive mobilization of the affected limb. Return to the initial position. Duration / number of times: 23 minutes. Information Methods: The practitioner will be careful to the patient's response; the mobilization is done within the limits of pain.

3. The initial position - dorsal decubitus with the ankles out from the surface of the support, the patient will execute plantar flexion motion and the dorsal flexion initially be carried out simultaneously with both legs and then alternately. Return to the initial position.

Duration / number of repeat 10-15 times. Methodical indications: the exercise will be associated with the correct breathing; the patient performs the exercise within the limits of pain.

4. The initial position dorsal decubitus runs concentric contractions throughout amplitude and then progressively insert eccentric contraction. Duration / number of times: 1-2 minutes. Methodology: the exercise will be associated with the correct breathing; the patient performs the exercise within the limits of pain

Basis part:

5. Rhythmic stabilization. The initial position - dorsal decubitus with his foot off the bed, bent to the limit, the physical therapist with one hand stabilizes the ankle side to the distal extremity and with the other foot at the metatarsal catch; the therapist gives the command "hold and do not let your feet move," then push toward dorsal flexion and plantar rapidly alternating the two directions; relaxation. Duration / number of times: 23 minutes. Methodical instructions: between contraction of agonists and antagonists are not allowed relaxation.

6. Initial position - dorsal decubitus, the therapist will perform neuro-proprioceptive technique called "Slow reversing by oppose", rhythmic concentric contractions of agonists and antagonists, on the entire possible amplitude without breaks between reversals, against a maximum strength, at the end of the amplitude of each movement it will be executed the isometric contraction. Return to the initial position. Duration / number of times: 1-2 minutes. Methodical instructions: maximum amplitude as possible to limit pain, medium tempo.

7. Isometric contraction in the shortened zone. The initial position - dorsal decubitus with his foot off the bed, the physical therapist with one hand stabilizes the ankle side to the distal extremity and with the other foot at the metatarsal catch in the shortening of muscle repeated isometric contractions running, with pauses between repetitions. Duration / number of times: 1-3 minutes. Methodical instructions: dorsal flexion - relaxation; plantar flexion - relaxation.

8. The initial position - standing, the tip of the affected foot on a support, the other is on the ground. Healthy foot is raised from the ground, which determines the extent of the Achilles tendon. Return to the initial position. Duration / number of times: 4-6 times. Methodological Notes: This position is maintained for 5 seconds, straight back.

9. Initial position - standing face to the fixed ladder, hands gripped to the shoulders slat. Alternative raising of the heels "game ankle". Return to the initial position. Duration / number of times: 10 to 15 times. Methodic: maximum possible, free breathing.

10. Initial position - standing face to the fixed ladder, hands gripped to the shoulders. Patient lead the injured leg stretched back, peak support, he will try to press their body weight on the leg trauma. Return to the initial position. Duration / number of times: five times. Methodic indications: medium tempo, hold this position for 5 seconds.

11. Initial position - sitting on a chair with a towel on the affected leg, cling towel on foot and pulled inward by light running. Return to the initial position. Duration / number of times: 6-8 times. Indications method: slow tempo, maintaining this position for 5 seconds followed by relaxation for 5 seconds.

End part:

12. Initial position - sitting on a chair, feet on the ground, gripping a pen or matchbox with trauma toes and move them to another close place. Duration / number of repetitions: 6-8 times. Methodic indications: to drop objects below, the exercise will be performed in a medium to slow tempo.

13. Initial position - sitting on a chair, the affected leg placed on physiotherapist thigh. With a hand therapist grabs fingers and the tip of the foot, the other catch the foot at the

malleolus level. Therapist performs stretching the Achilles tendon. Duration / number of repetitions: 2 minutes. Methodic: tempo slow, gentle stretching without causing pain.

14. The initial position - sitting, lying healthy foot, the foot of injured leg bent and placed on top of the other, the performance of the laterality movements of the plant. Duration / number of times: 8-10 times. Notes: On the amplitude limit.

15. The initial position - standing, it is executed walking by rolling the soles keeping the walking the frame. Duration / number of repetitions: 3-4 minute. Methods: right step, straight back.

Results of the study:

During the period of study, to the patients were applied therapist model program for recovering ankle fracture with duration of 10 days. It was recommended that patients carry out the proposed exercises and individual at home. Physical therapy program was applied each day lasting 30 minutes each session. After a hospitalization for 10 days patients are discharged with improvement in clinical signs: pain, muscle strength, joint amplitude, edema and vasomotor disturbances.

According to the results shown in Table 2 and Table 3, note that the application of the selected program causes a particular pattern of recovery of joint mobility improvement, muscle strength and endurance of both the plantar flexion and dorsal flexion.

After a hospitalization for 10 days patients are discharged with improvement in clinical signs: pain, muscle strength, joint amplitude, edema and vasomotor disturbances.

After applying the therapist model program to the ankle fracture of patients it is showed an improvement in joint mobility which originally had the following data: plantar flexion was 25.5 and finally 34.4 while dorsal flexion initially have results within 9.4 average and finally 15. All patients from the application program model have achieved positive results and improving general health state. The program model was according the principles of physical therapy, particularly respecting the principle of progressivity, which is the dosage and gradation of the exercises according to the patient condition.

Table 2. The starting and ending indices of articular mobility (plantar flexion):

Name, surname	Age	Sex	Plantar flexion normality	Plantar flexion (initial)	Plantar flexion (final)	Difference
A.A.	46 years	Male	45°	25°	35°	10°
C.G.	50 years	Male	45°	30°	41°	11°
G.N.	57 years	Female	45°	29°	38°	9°
M.I.	49 years	Male	45°	15°	26°	11°
R.S.	55 years	Female	45°	27°	32°	5°
x	51,4		45°	25,5°	34,4°	9,2°

Table 3. The starting and ending indices of articular mobility (dorsal flexion):

Name, surname	Age	Sex	Dorsal flexion normality	Dorsal flexion (initial)	Dorsal flexion (final)	Difference
A.A.	46 years	Male	20°	7°	16°	9°
C.G.	50 years	Male	20°	10°	15°	5°
G.N.	57 years	Female	20°	13°	17°	4°
M.I.	49 years	Male	20°	6°	13°	7°
R.S.	55 years	Female	20°	11°	14°	3°
x	51,4		20°	9,4°	15°	5,6°

During work the patients are trained on compliance the regime of physical spare, continuation of treatment prescribed by therapist, returning to periodic monitoring to record the results gained. Also they are directed to training or requalification if the deficit does not allow initial profession.

Conclusions:

1. Analyzing the literature we can note a rising efficiency in the recovery of ankle fracture by using methods and techniques associated with neuro-proprioceptive kinetic means.
2. The implementation of the model program of patients with ankle fracture contributed to a recovery in a much shorter period both mobility and muscle strength and resistance contributing to improvement of their walking function and the ability to fit the patient's daily activities easier .
3. In the case of trauma, it is very important the full recover of all the talocrural joints, as partial or poor recovery lead to negative results, an incomplete range of movement and complications arise.

References:

1. <http://www.lectiadeortopedie.ro/traumatologia-membrului-inferior/fractura-de-talus/>;
2. Zavalîşca A., Gimnastica medicală, editura Iontus, Chişinău 2014;
3. Lupescu V., Traumatologie, vol I Luxaţiile şi fracturile membrelor, 1998;
4. Cordun M., Kinetologie medicală, Editura Axa, Bucureşti 1999;
5. Albu C., Tiberiu-Leonard-Armbruster, Albu M., Kinetoterapie: metodologia poziţionării şi mobilizării pacientului, Editura Polirom 2012.

THE COMPARATIVE ANALYSIS OF FINISHING OFFENSIVE ACTIONS OF THE FIRST PLACE TEAM IN PLAY-OFF AND PLAY-OUT AT THE END OF THE REGULATED SEASON

*Cismaru Valentin, Stoica Marian Adrian, Ana Ciprian Andrei, Florea Sebastian
National University of Physical Education and Sports
Bucharest, Romania
e-mail: ady_stoica7@yahoo.ro
Coordinator: Conf. Univ. Dr. Grigore Gheorghe*

Abstract: Because of the main goal of football, the goal of scoring, the ending represents the essential action required for obtaining the favorable results, realized with summing some elements and processes both technical and tactical. Through research we want to record, through comparison, the importance and efficiency of completing the offensive actions of the Romanian League 1 teams. For fulfilling this objective, we want to analyses in detail the number of offensive actions completed through goals in the gate, as well as goals outside the gate, also the blocked endings, by the goal-keeper or by any other adversary in a specific number of games. Finally we want to emphasize the capacity of the offensive actions of ending by the present teams.

Introduction

The reason for choosing this theme

Observing the real crisis that the Romanian football is currently going through, we want to track the differences in the level of attack action between the first place players in play-off and play-out.

The purpose of this paper is to realize the necessity to carry out as many empty actions and to bring to the forefront the stages of attack at the level of League 1 in Romania.

Purpose and objectives proposed

The purpose of this paper is to analyze the frequency and effectiveness of attack actions at the play-out and play-off teams. This study will show to what extent attack actions that materialize in a larger number can benefit a team, and what form of branding is most often used by teams in league 1 and if there are differences between teams in the first half of the ranking And those in the second half.

In order to achieve our goal, we set the following goals:

- Systematization of specialized literature;
- elaboration of the registration cards, which have the data collected during the matches recorded;
- collecting data observed during matches;
- Processing and interpretation of data obtained from registration records.

Theoretical-methodological foundation of the work

Description of technical elements to hit the ball

Hitting the ball is the practical, concrete way the ball moves between the players on the playing court.

Hitting the ball can be done by the following procedures:

1.Hit the ball with your leg

- Hitting the ball with the sirt - inside, full, outside
- Hitting the ball with the inside of the paw
- Hitting the ball with the outside

- Hitting the ball with the top
- Hit the ball with the heel
- Kicking the ball with your knee

2.Hit the ball with your head

- On the spot: one foot forward, with the legs on the same line
- Jumping: kicking on one leg with beating on both legs
- Running
- From the plunger (from the place or from the running)

The technical elements of the ball

Hitting the ball is the practical, concrete way the ball moves between the players on the playing court.

Hitting the ball can be done by the following procedures:

1.Love the ball with your leg

- Hitting the ball with the sirtet - inside, full, outside
- Hitting the ball with the inside of the paw
- Hitting the ball with the outside
- Hitting the ball with the top
- Hit the ball with the heel
- Kicking the ball with your knee

2.Download the ball with your head

- On the spot: one foot forward, with the legs on the same line
- Jumping: kicking on one leg with beating on both legs
- Running
- From the plunger (from the place or from the running)

Presentation, Processing and Interpretation of data

2.1 Research methods used

In order to be realizable this research work, we have used a series of research methods known to everyone, namely:

- method of observation - with this method we made observations on official matches played in the play-off and play-out of the championship
- registration method - following a series of official games we produced 14 record sheets:
 - 7 record sheets for official games in the playoffs of the league 1 Romania;
 - 7 official game record sheets in the play-off of the league 1 Romania.
- Statistical-mathematical method - we have made calculations such as arithmetic mean.
- graphical method - we performed a series of graphic representations in order to obtain a more objective image of the results obtained from the research.

2.2 Presentation of data

Goals	First Half	Second Half
Gaz Metan Medias	1	7
FC Viitorul	2	5

Tabel 1 : The number of goals scored by teams in play off and play out

Shots on target	First Half	Second Half
Gaz Metan Medias	16	24
FC Viitorul	11	18

Tabel 2: The number of shots on target by teams in play off and play out

Shots off target	First Half	Second Half
Gaz Metan Medias	11	20

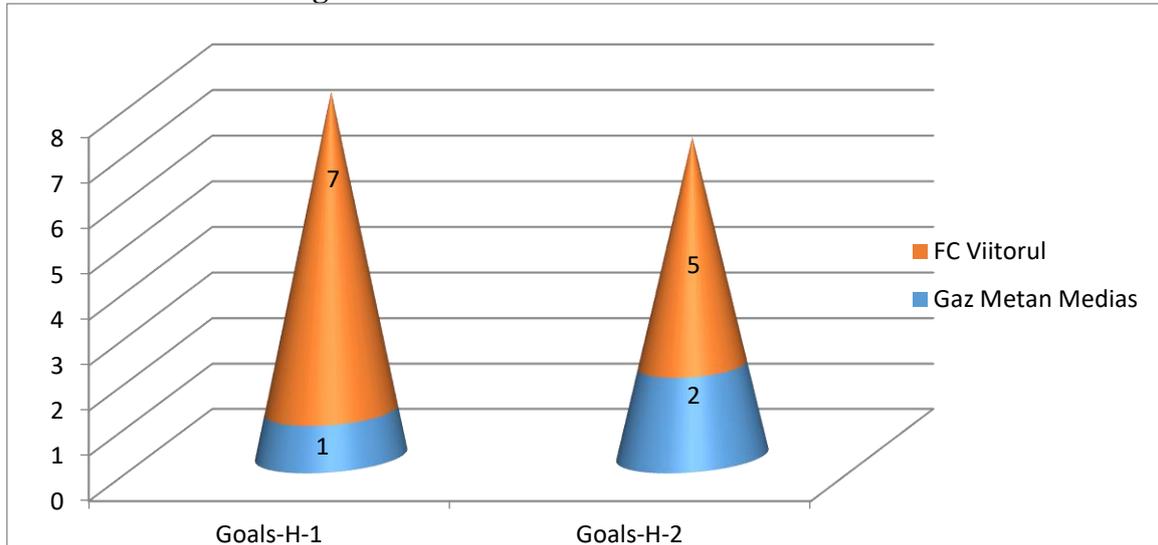
FC Viitorul	16	15
-------------	----	----

Tabel 3: The number of shots off targe by teams in play off and play out

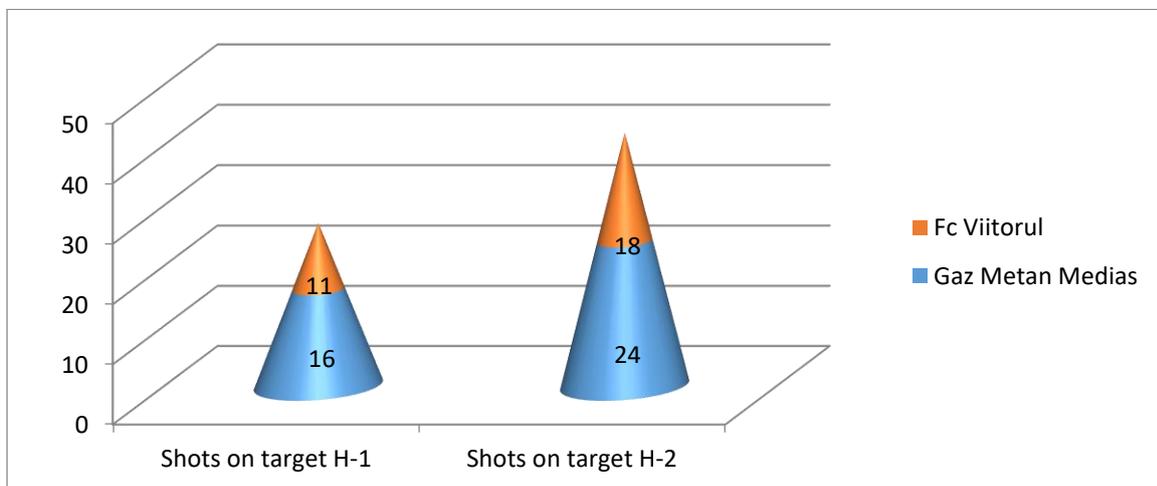
Blocked shots	First Half	Second Half
Gaz Metan Medias	8	7
FC Viitorul	8	10

Tabel 4: The number of blocked shots by teams in play off and play out

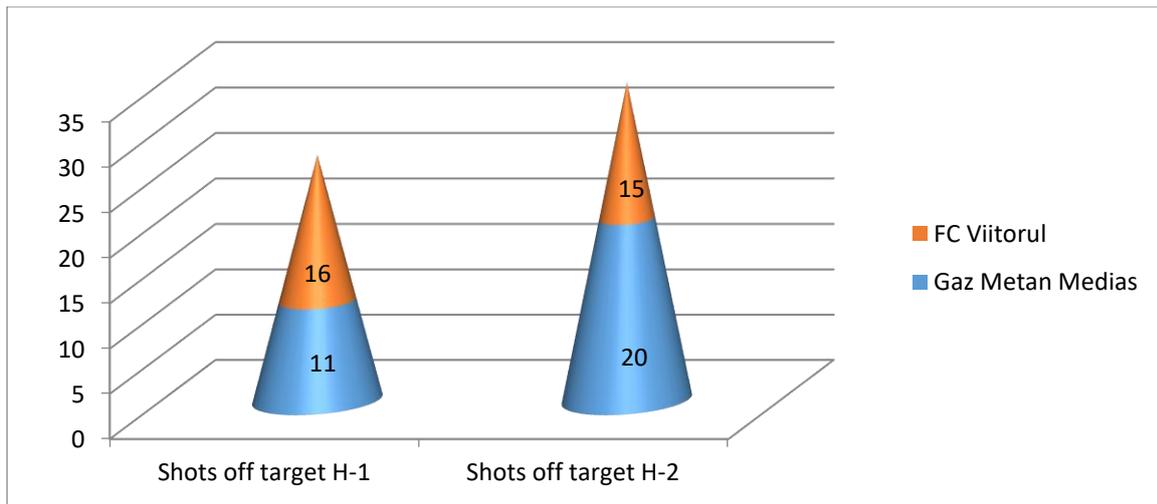
2.3 Processing of data



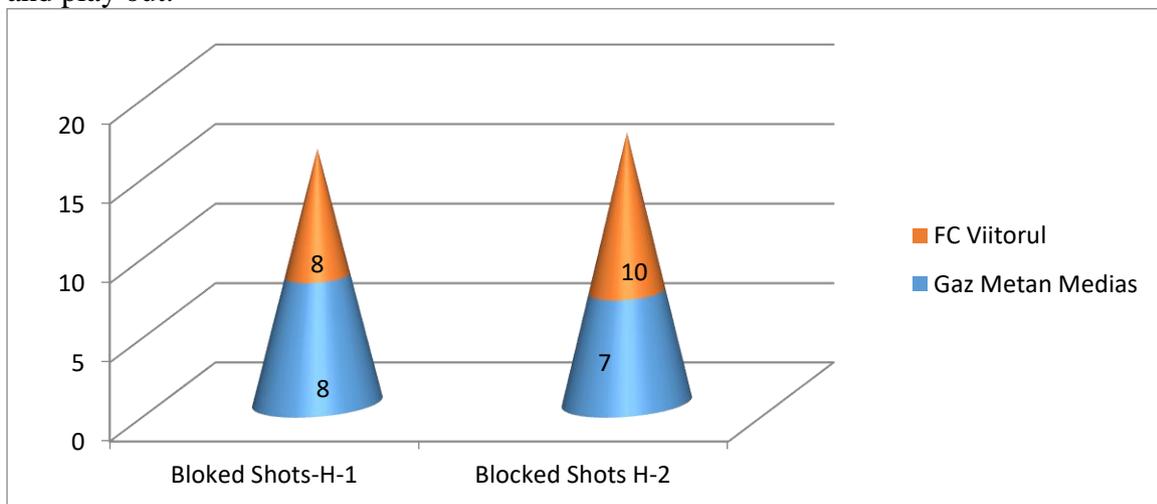
Graphic No. 1 This chart compares the percentage of goals of teams from play off and play out.



Graphic No. 2 This chart compares the percentage of shots on target of teams from play off and play out.



Graphic No. 3 This chart compares the percentage of shots off target of teams from play off and play out.



Graphic No. 4 This chart compares the percentage of blocked shots of teams from play off and play out.

2.4 Interpretation of data

In the graphics above we can observe that the number of opportunities created differs depending on the place occupied and the objective. We can observe that in the case of first-place teams from play off and from play out the goal occasions is slightly above average. We observe that in the case of first-place team in play out the goal occasions is bigger than first-place team in play off because of the lack of pressure, but also because of the value level in play off.

Conclusions

Following the study we can draw the following conclusions:

Even if the number of opportunities created by the play-off teams was higher than that of the play-off teams, the average of goals after 7 stages was higher for the play-out team because the play-out teams are much more Releasing the emphasis on the attack, thus making it easier to create the advantage.

Based on the study, we find that the number of sutures on the gate of the play-off teams is higher, so we can see that the level of football in the first part of the rankings is higher, the players being better prepared from the physical and technical-tactical point of view, But also from a psychological point of view the motivation is different.

We find that the number of sutures besides the play-off teams is lower, so we can see that they manage to pass the ball over the gate space more than the play-off teams.

Bibliografie

3. Ciolcă, S.M., 2008, *Fotbal. Fundamente Teoretice și Metodice*, București, Academia Națională de Educație Fizică și Sport.
4. Ciolcă, Sorin-Mirel – „Fotbal - Curs de aprofundare. Pregătire antrenori”, Editura Fundației România de Mâine, București, 163 pg., 2006 (reeditare A.N.E.F.S., 2008)
5. Grigore, Gh., 2008, *Selecția la Copii și Juniori*, Editura Moroșan, București.

TAEKWONDO - MEANS OF INFLUENCING PSYCHOMOTOR CHARACTERISTICS

Mircică Liliana

National University of Physical Education and Sports

Bucharest, Romania

Email: mircica.maria.liliana@gmail.com

Abstract. Practicing taekwondo in an organized environment helps developing coordination, agility, neuromuscular elasticity, balance, spatio-temporal orientation, skills; having significant benefits for the practitioner's health and vitality. It's a way of learning how to train together and be in touch with each other. Every single technique will work the whole body simultaneously, in a very coordinated manner, the final result being a natural position with minimum effort. Also, involving adults in such activities has a beneficial effect over psychomotor characteristics. The develop can be physical "Tae" and "Kwon" but also mental "Do". For those practicing taekwondo, perseverance, self-discipline and self-control are main benefits. We could assume that practitioners will learn a lot about themselves, about their abilities and also how mix both physical and mental aspects in facing and dealing with daily issues. This study aims to identify some psychometric parameters that can be modified by systematically practicing TKD. Have been tested a number of 14 students from the "Carol Davila" University of Medicine and Pharmacy in Bucharest, practitioners of Taekwondo discipline, students of the first year of study and students of the second year of study. The test was conducted in March 2017 with the "Myotest PRO", which calculates and plays: height, Time of contact, reactivity, stiffness, power, force, velocity, Power max. In conclusion, we can argue that psychological changes occur after two years of study for students who choose to conduct taekwondo discipline.

Keywords : Taekwondo, psychomotor characteristics

Introduction. Martial arts have always attracted enormous interest among all categories of citizens, but especially among young people. This interes, unusual, to practice martial arts, is largely explained by the coincidence that exists between the intrinsic desire of each individual to self-refine their personality and the beneficial effects they might produce on the physical (biological) ego- which takes into account the physical availability, spiritual self-comprised of the inherited or acquired psychic traits and the social ego, which are based on relations and social integration.(Păunescu, 2011). Both for young and elite athletes, the use of TKD skills seem to improve their physical level (Matsushigue, Hartmann, &Franchini, 2009; Haddad et al., 2011).

During typical training (Poomsae and Kyorugi), the exercise intensity does stimulate the cardiovascular system above the aerobic training threshold (Podul et al., 2007; Toskovic, Binecuvântare, Williford, 2002). Indeed, the Kyorugi competitions that are included in the Olympic Games need higher aerobic capacity levels than Poomsae competitions (Fong, & Ng, 201). Pieter, Taaffe, &Heijmans, 1990) au investigat exercitarea și recuperarea resurselor umane din practicanții TKD de agrement de sex masculin si a constatat ca lovind si stantare ar duce la rate semnificativ mai mari exercitii pentru inima (90-91% din HR max) decât formele care efectuează în mod repetat (Poomsae) (~ 80% din HR max). In fact, specific TKD technical training allows the maintenance or even development of cardiovascular fitness at a level that is necessary for competition conditioning (Haddad et al., 2015).

Thus, practicing TKD in an organized setting develops coordination, skill, agility, neuromuscular elasticity, balance, spatio-temporal orientation, effort capacity; Having positive

influences on the vitality and health of practitioners. Every single technique will work the whole body simultaneously, in a very coordinated manner, the final result being a natural position with minimum effort.(Păunescu, 2011a). Also, involving adults in such activities has a beneficial effect over psychomotor characteristics. The develop can be physical “Tae” and “Kwon” but also mental “Do”. For those practicing taekwondo, perseverance, self-discipline and self-control are main benefits.(Păunescu, 2011b)

Aim of paper

This study aims to identify some psychomotor parameters that can be modified by systematically practicing TKD. We consider the major benefit for TKD specialists as well as the possibility to enrich the selection criteria in order to form representative batches and to efficiently use the information provided in order to reorganize the training activities.

Material and methods. Have been tested a number of 14 students from the "Carol Davila" University of Medicine and Pharmacy in Bucharest, practitioners of Taekwondo discipline, students of the first year of study and students of the second year of study. The test was conducted in March 2017 with the "Myotest PRO", which calculates and plays: height, Time of contact, reactivity, stiffness, power, force, velocity, Power max., by means of a three-dimensional accelerometer. Sensor can detect acceleration during motion execution. For the data to be as eloquent as possible, the students performed three tests for each sample, averaging the three results, thus obtaining the final value of each sample for each student.

Results. Order to make visible changes to their own performance, perseverance, ambition, desire to overcome, to compete with oneself is needed.

Nr. Crt.	Name/ Surname	Age (years)	Waist (cm)	Weight (kg)
Students of the 2nd year of study				
1	C.A.	23	164	51
2	F.A.	22	163	53
3	D.M.	27	178	78
4	M.G.	28	170	68
5	R.D.	26	180	72
6	Q.P.	20	175	64
7	Ț.I.	21	173	60
Students of 1st year of study				
8	R.A.	19	180	73
9	P.I.	20	170	70
10	R.S.	21	166	55
11	M.A.	20	172	70
12	R.D.	23	165	58
13	G.C.	25	178	75
14	D.R.	22	163	50

Table 1. Centralization of

JUMP-PLIOMETRY				
	Height cm	T. of contact (ms)	Reactivity	Stiffness kn/m
Students of the 2nd year of study				
media	28,5	149	3,69	52,9
Students of the 1st year of study				
media	23,8	164	2,34	34,8

Table 2. Results for first and second year students at the Jump- Pliometry trial

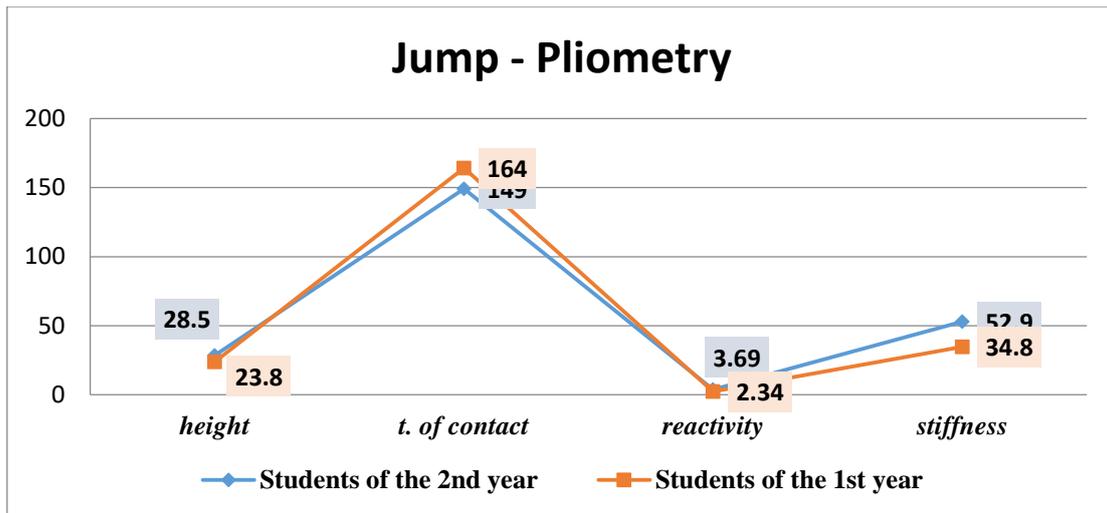


Figure 1. Graphical comparison of the results to the Jump-Pliometry sample

As can be seen in the Jump-Pliometry test, the differences between the students of the second year and the students of the first year are quite eloquent. So we have the following calculated differences: 4,7 cm - height; 15 ms – *T. of contact*; 1,35– *reactivity*; 18,1 kn/m – *stiffness*

CMJ				
	Height cm	Power w/kg	Force N/kg	Velocity cm/s
Students of the 2nd year of study				
media	32,3	44,1	28,3	180
Students of the 1st year of study				
media	23,2	27,0	17,5	160

Table 3. Results for 1st and 2nd year students at the Counter Movement Jump trial (CMJ)

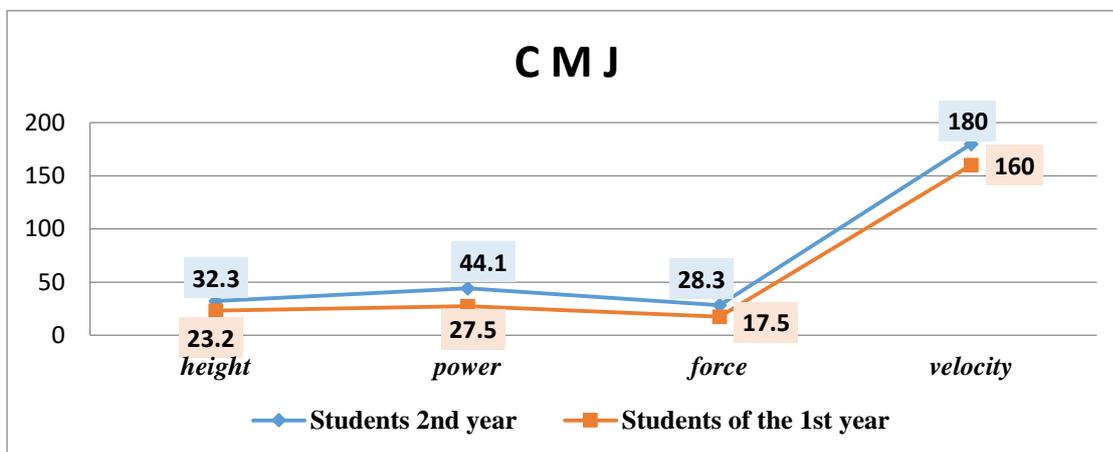


Figure 2. Graphical comparison of results at Jamp Counter Movement (CMJ)

In this test, Counter Movement Jump, it is noted that the differences between the two groups of students are quite eloquent. Thus, we have the following differences: 9.1 cm - "Height"; 16.6 w / kg - "power"; 10.8 N / kg - "force"; 20 cm / s - "velocity".

SJ					
	Height cm	Power w/kg	Force N/kg	Velocity cm/s	P. Max
Students of the 2nd year of study					
media	28,4	52,04	30,8	186	45,8
Students of tje 1st year of study					
media	19,1	27,9	23,8	172	32,6

Table 4. Results for 1st and 2nd year students in Squat - jump (SJ)

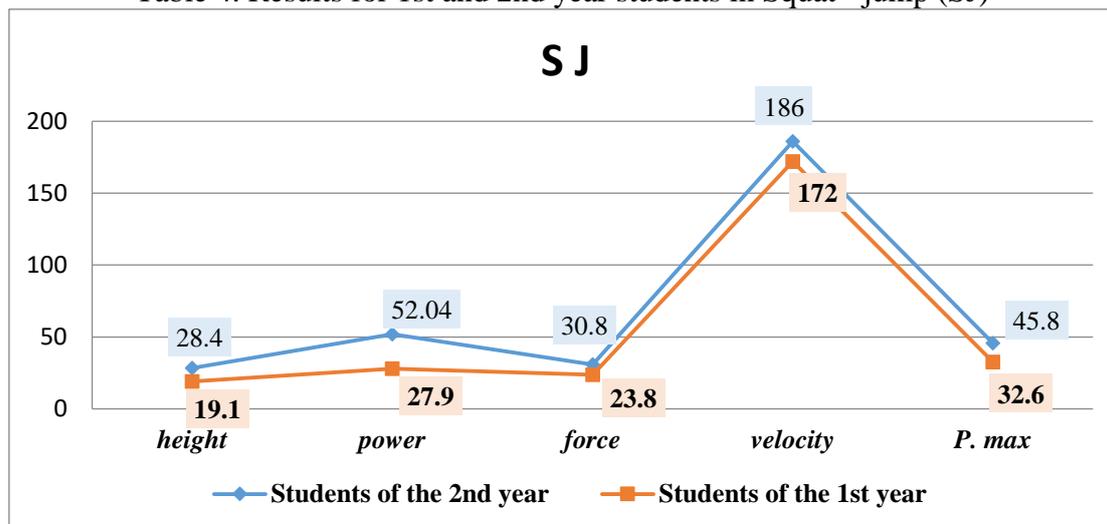


Figura 3. Compararea grafică a rezultatelor la proba Squat – jump (SJ)

In the Squat - jump test, there are remarkable differences between the two groups of subjects, namely: 9.3 cm - height; 24.14 w / kg - power; 7 N / kg - force; 14 cm / s - velocity; 13.2 w / kg - P. max.

Conclusions All this is accomplished through a varied program of progressively developed technical means and physical training elements both general and specific.

In conclusion, we can argue that there are psychological changes that are apparent after the two years of study for which students choose to conduct the taekwondo discipline.

Bibliography

- Fong, S.S., Ng, G.Y. (2011). Does Taekwondo training improve physical fitness? *Phys Ther Sport* 12: 100-106
- Haddad M, Chaouachi A, Wong del P, Castagna C, Chamari K., (2011). Heart rate responses and training load during nonspecific and specific aerobic training in adolescent taekwondo athletes. *J Hum Kinet* 29: 59-66.
- Haddad, M., Ouergui, I., Hammami, N., & Chamari, K. (2015). Physical Training in Taekwondo: Generic and Specific Training. *Performance Optimization in Taekwondo: From Laboratory to Field*, 85.
- Matsushigue, K.A., Hartmann, K, Franchin,i E., (2009). Taekwondo: Physiological responses and match analysis. *J Strength Cond Res* 23: 1112-1117
- Păunescu, C.(2011a), *Contribuții la ameliorarea pregătirii sportivilor de taekwondo wtf prin selecția adecvată a acțiuniloreficiente din competițiile de prestigiu*. Teză de Doctorat. București: UNEFS
- Păunescu, C., (2011b), *Taekwondo curs de bază*. București: Printech
- Pieter W, Taaffe D, Heijmans J., (1990). Heart rate response to taekwondo forms and technique combinations. *J Sports Med Phys Fitness* 30: 97-102
- Podul CA, Jones MA, Hitchen P, Sanchez X (2007) . Heart rate responses to Taekwondo training in experienced practitioners. *J Strength Cond Res* 21: 718-723
- Toskovic NN, Binecuvântare D, Williford H.N., (2002). The effect of experience and gender on cardiovascular and metabolic responses with dynamic Tae Kwon Do exercise. *J Strength Cond Res* 16: 278-285.

Contents

Bashirova, D.M., Burtseva, E.V. -Thinking and game attention developing methods among 12-13 years old athletes, engaged in table tennis.....	3
Bordei Alexandru-Silvian -Performance prediction using the method of standardization, at swimmers.....	6
Buiucliu Ștefan, Breană Bogdan -The coaches' vision regarding the share of psychic features in the selection and training for individual and team sports	12
Nadejda Bushueva -The selection of children for the field and track athletics classes based on the indexes of physical development	20
Felegeanu Constantin-Cosmin, Sburlan Irina -Study on the importance of improving passing game with both feet to improve performance in football	25
Gavrilov Aleksej - Biomechanical markers dynamics in qualified powerlifters under the influence of a power load.....	31
Gheorghe Marian Ciprian -Study on the development of quality driving force of iii level swimmers.....	35
Layzan Ksenia -Model characteristics sports- technique indicators free programs young single skaters	39
Severin Alina -Developing mobility of child swimmers	42
Constantin Dan, Săcuiu A.I., Tănase T.B., Vernescu M.F -The analysis of marking and dispossession to the level of the teams from play-out and play-off.....	48
Roman Iordan, Felegeanu Constantin -Assessment of the coaches' opinion on the use of the questioning method in training 11-12-old football players	53
Sokolov Sergei -Physical training of futsal players during preparation period.....	61
Tachev Tomi -Analyzing the match between the teams of Bulgaria and France. Semifinal of European Championship 2015 in Bulgaria.....	65
Terekhin Vladimir -Design of model characteristics of elements on the basis of the complex biomechanical analysis of movements in acrobatic rock'n'roll	69
Yampolskiy Alexey Sergeevich -Individualization of the training process in command sports (on the example of handball) on the basis of the	73
Zibrova Ekaterina -Influence of two sides of skill of highly qualified figure skaters upon evaluation of their competition programs	79
Goncharova N., Nosova N., Butenko H. -Experience of implementing health-forming technologies into physical education of primary-aged school children.....	83
Rusănescu Alina-Gabriela - The use of information and communication technology means in physical education and sports classes	89
Rusu, O.H., Rusu, R.G. -The relation between the class of physical education and the selection for football training with the purpose of developing the general motricity for 7-8 year old pupils	93
Ionescu Gheorghe Drăguț -Physical training in down syndrom judo athletes	96
Boncheva, M.D. Vladova, I. - Methodical requirements to ensure safety in lessons in physical education and sport	101
Cebotaru Veronica -The development of motor qualities of secondary school students in physical education lessons with football themes	107

Caleap Carina Oxana, Ailutoaei Tudor-Costin -Study regarding the lateral speed, agility, and body control in bacau county sixth graders	112
Popa Roxana Nicoleta, Rotariu Maria Monica -Comparative study regarding the testing of the ability to control the strength, speed, and dynamic balance in bacau county sixth graders.....	120
Saidova M.H. Davlyatova M. -Evaluation of the contemporary state and development of physical culture and sports in the Republic of Tajikistan	126
Moskalenkova, A, Kravchyk, T -Sport and event quest-tour as an innovative form of youth tourism.....	133
Iskakov, T., Kulbaev, A. -Assessment quality of services sporting events in the Republic of Kazakhstan	137
Pătrașcu Cătălin, Oprea Ion, Furnică Alexandru, Tudor Marius -The analysis of the importance of possession at the level of the teams in play-out and play-off.....	140
Karimova D.D., Bakhodurova Oimkhon Zafarovna -Peculiarities of formation and development of the network of subsidiary schools-boarders in specific conditions of the Republic of Tajikistan	144
Альмуханбетова Г.Н., Джамбербаев Б.О., Конакбаев Б.М. -Контроль за технической подготовкой дзюдоисток в условиях соревнований.	149
Antohe Bogdan -Reducing the muscle chain hypertony through myofascial techniques in athletes	155
Breană Bogdan, Maftai Ștefan -A functional recovery of an athlete with post-effort lumbago	165
Danciu Răzvan, Fediuc Alin -Sensory differences in autism spectrum disorder	170
Albu Sonia -General issues regarding gender equality in Romania.....	173
Maftai Ștefan, Buiucliu Ștefan -Study on using badminton as an attractive leisure-time means.....	177
Cînceanu Adrian Mădălin -The benefits of resilience and sports in poor societies	181
Elmira Karapetian -Unique ways of regulation and specifics of expressing pre-start emotions of a shooter... ..	185
Radu Roxana Maria Nicoleta -The role of the leader and emotional exchange among group members.....	188
Ciocîrlan Mihai-Cosmin -Review on the use of blood flow restriction training in adult population	191
Ciocîrlan Mihai-Cosmin - The effects of high volume training on body composition in adult men	194
Giurea Ioana -The role and importance of the neuro-proprioceptive means in the pathology of the post traumatic shoulder.....	198
Giurea Ioana -Treatment of cervical spondylosis using physio and electrotherapy modalities	207
Morari Maria -The effectiveness of applying the neuro- proprioceptive facility techniques in the recovery of ankle fractures	214
Cismaru Valentin, Stoica Marian Adrian, Ana Ciprian Andrei, Florea Sebastian -The comparative analysis of finishing offensive actions of the first place team in play-off and play-out at the end of the regulated season	219
Mircică Liliana -Taekwondo - means of influencing psychomotor characteristics	224