MINISTRY OF EDUCATION
ECOLOGICAL UNIVERSITY OF BUCHAREST
FACULTY OF PHYSICAL EDUCATION AND SPORT
ASSOCIATION OF PHYSICAL EDUCATION AND SPORT UNIVERSITIES

Proceedings of the International Scientific Conference

"Actualities and Perspectives of Physical Education and Sport Sciences"

3rd edition, **April, 06, 2022**

BUCHAREST

2022

Editura PRINTECH
Tipar executat la:
S.C. ANDOR TIPO S.R.L. – Editura PRINTECH
Site: www.andortipo.ro; www.printech.ro
Adresa: Str. Tunari nr. 11, Sector 2, Bucharest

Proceedings of the International Scientific Conference

"Actualities and Perspectives of Physical Education and Sport Sciences"

3rd edition, April, 06, 2022

ISSN 2734-8512

ISSN-L 2734-8512

Organizing Committee:

President: Enescu George Alexandru Platini, Lecturer, Ph. D., Head of Department, Faculty of Physical Education and Sport, Ecological University of Bucharest, Romania

Members:

Anton Margareta, Assoc. prof., Ph. D., F.P.F.S., Ecological University of Bucharest, Romania
Slavila Mircea, Assoc. prof., Ph. D., F.P.F.S., Ecological University of Bucharest, Romania
Stanescu Marius, Assoc. prof., Ph. D., F.P.F.S., Ecological University of Bucharest, Romania
Cheran Cosmina, Lecturer, Ph. D., F.P.F.S., Ecological University of Bucharest, Romania
Ivanov Xenia, Lecturer, Ph. D., F.P.F.S., Ecological University of Bucharest, Romania
Bucureşteanu Liliana, Lecturer, Ph. D., F.P.F.S., Ecological University of Bucharest, Romania
Grigore Alin, Lecturer, Ph. D., F.P.F.S., Ecological University of Bucharest, Romania
Grigore Maria Florica, Lecturer, Ph. D., F.P.F.S., Ecological University of Bucharest, Romania
Murariu Carmen, Lecturer, Ph. D., F.P.F.S., Ecological University of Bucharest, Romania
Alexandrescu Nicoleta Cristina, Lecturer, Ph. D., F.P.F.S., Ecological University of Bucharest, Romania

Honorary President:

Giuliano Tevi, Assoc. prof. Ph. D., Rector of the Ecological University of Bucharest

Scientific Committee:

President: Potop Vladimir, Assoc. Prof., Ph.D., D.Sc., University of Pitesti, Romania

Members:

Akhmetov Rustam, Professor, Doctor in Physical Education and Sports, Department of Theoretical and Methodological Foundations of Physical Education and Sports, Zhytomyr Ivan Franko State University, (Zhytomyr, Ukraine)

Borysova Olha, Professor, Doctor of Physical Education and Sport, Vice-Rector of scientific and pedagogical work of the National University of Ukraine on Physical Education and Sport, (Kiev, Ukraine)

Bosenko Anatoly, Professor, Doctor of Pedagogical Sciences, Head of the Department of Biology and Health, South Ukrainian National Pedagogical University named after K.D. Ushynsky, (Odesa, Ukraine)

Briskin Yuriy, Professor, Doctor of physical education and sport, Head of Academic Department of Theory of Sport and Physical Culture, Ivan Bobersky Lviv State University of Physical Culture, Ukraine (Lviv, Ukraine)

Carp Ion, Professor, Ph. D., State University of Physical Education and Sport, (Chisinau, Moldova)

Chernozub Andrii, Professor, Doctor of Biological Sciences, Dean of the Faculty of Physical training and Sport of Petro Mohyla Black Sea National University, (Mykolaiv, Ukraine)

Cieślicka Mirosława, Ph.D., Physical Education and Sport, Department of Human Physiology, Collegium Medicum Ludwik Rydygier in Bydgoszcz (Bydgoszcz, Poland).

Danylchenko I. Svitlana, Assoc. prof., Ph. D. of Medical Sciences, Department of Medical and Biological basics of sports and physical rehabilitation of Petro Mohyla Black Sea National University, (Mykolaiv, Ukraine)

Dobrescu Tatiana, Professor, Ph. D., Vice- Dean in charge with scientific research management, national and international relations, Faculty of Movement, Sports and Health Sciences, Vasile Alecsandri University from Bacau, Romania

Dragomir Marian, Professor, Ph. D., Faculty of Physical Education and Sport, University of Craiova, Romania

TABLE OF CONTENTS
PHYSICAL EDUCATION AND SPORT

SPORT PERFORMANCE

KINETOTHERAPY

VARIA

PHYSICAL EDUCATION AND SPORT

OPTIMIZING THE PSYCHOMOTOR SPEED SKILL-THROUGH THE PHYSICAL EDUCATION CLASS USING MOVEMENT GAMES AT THE AGE OF 10

Enescu George Alexandru Platini[1], Frățilă Ion[2]

[1] *Ecological University of Bucharest, Faculty of Physical Education and Sport, Bd. Vasile Milea nr.1 G, Sector 6, Bucharest, Corresponding author:George.enescu@aletheea.ro*
[2] *Teacher of the Gymnasium School no. 1 Mogoșoaia, Ilfov, Corresponding author: ion.fratila68@yahoo.com*

Abstract

Early school age is a very important stage in the formation of pupils from all points of view: psychomotor, emotional, cognitive. According to the specialized literature of our field, the age of 6-10 years is the most favorable for the optimization of motor skills. In the physical education class, movement games are the most eagerly awaited activities by students. They contribute directly to the development of psychomotor skills, the education of personality traits and the shaping of moral values. This study is a fact-finding one and its main objective is to monitor and optimize the psychomotor speed skill.

Keywords: *motor skills, speed, physical education, games, young age*.

1. Introduction

Speed is the ability to perform motor acts and actions with the whole body or parts of it, in the shortest possible time, therefore with maximum accessible rapidity, depending on the existing conditions (Gh. Cârstea 1993-1997).

At the age of 10, movement games play a very important role as well.

The game generally „reflects the reality of life, but in the same time it subordinates life to some of its laws. It aims to change the surrounding reality, but it is obliged to prepare man for a creative life, to present himself as an important source of formation of human culture" (Gh.Balint, 2009, p.19.).

In the physical education class, movement games are the most expected activities by students. They contribute directly to the development of psychomotor skills, the education of personality traits and the shaping of moral values.

Research hypothesis: The use of action systems in the form of movement games according to individual characteristics in the physical education class will help to improve the parameters of speed psychomotor skill.

2. Material and method

In order to achieve the proposed objectives, we used the test as a research method.

For our research we applied the test "Shuttle 5 x 5 m" (present in the National Assessment System) both before and after the completion of the learning unit with topics in psychomotor speed skills.

We mention that the study was carried out at the level of the 4th grade A (10 boys and 10 girls) at the age of 10 from the Aletheea Secondary School, Sector 1, Bucharest.

The 20 students in our research are 10 years old, are medically fit and participate in physical education classes constantly on Mondays and Wednesdays for 50 minutes.

The test was applied twice before, as well as also after 4 weeks in both classes and the best repeat was taken into account.

The proposed program took place over 4 weeks (September 13, 2021-October 11, 2021).

In this paper we used the psycho-pedagogical ascertaining experiment, which aims to compare the data obtained by students of 4th grade A based on 2 variables:

Independent variable (Iv) represented by the proposed, differentiated program that takes place at the level of thematic links using motion games.

The dependent variable (Dv) refers to psychomotor skills: reaction speed, execution speed, repetition speed.

For the data analysis, processing and interpretation we used the computerized graphic method

SHUTTLE TEST 5 X 5 meters (test provided in the National Assessment System for primary education)

Tested skill:

Reaction, execution and repetition **speed**

Means required to perform the test:

- outdoor field or sports hall;
- track or floor with a smooth non-slip surface;
- two observers;
- a timer;

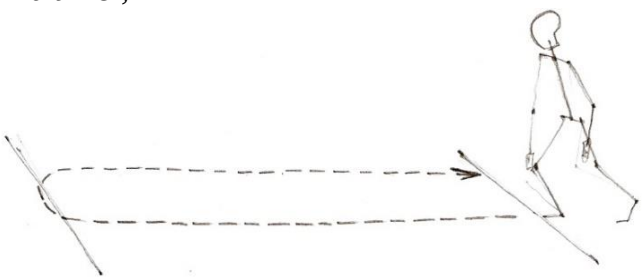


Figure 1 Shuttle test diagram 5x5m

Test description:

On the track there are two parallel lines at a distance of 5 meters, one of them being the starting line and the other being the finish line. The two observers will be placed to each of the two lines. The timer is held by the one close to the finish line.

The subject is in the top starting position, behind the starting line. At the signal, he runs at full speed to the second drawn line, touches the ground behind him with both feet, returns at the same speed to the starting point and, without stopping, resumes the route. He has to run 5 times that distance, which means 25 meters.

The timer is started by the observer when the subject's hind leg leaves.

On the last route, the observer placed close to the finish line stops the timer when the subject has completely crossed the finish line.

The aim is for the subject to cover the distance as quickly as possible.

The assessment (scoring)

The assistant records the best time obtained in the two tests.

Table no.1 Scoring scale for speed class 1

(According to the National Evaluation System)

EVALUATED SKILL	**EVALUATING INSTRUMENTS**	**4th grade A**					
SPEED	Shuttle 5x5	Boys			Girls		
		S	B	FB	sS	B	FFB
		6.2	6.1	6.00	6.6	6.5	6.4

3. Results and Discussions

After the initial testing on September 13, 2021, the 2 classes have the following values:

Table no.2 Initial results of the 5 x 5 m Shuttle test

4^{th} grade A

No.	Pupil's first and last name Boys	Speed	
		5X5m	Score
1	A.N	6.4	FB
2	A.M	6.4	FB
3	B.A	6.4	FB
4	C.R	6.4	FB
5	C.I	6.35	FB
6	L.A	6.37	FB
7	N.L	6.32	FB
8	N.F	6.39	FB
9	O.S	6.40	FB
10	P.C	6.39	FB
11.	O.A	5.50	FB
12.	U.D	5.95	FB
13.	E.D	6.00	FB

14.	R.A	5.45	FB
15.	EA	5.99	FB
16.	A.I	5.85	FB
17.	V.D	5.61	FB
18.	R.M	6.00	FB
19.	M.T	6.00	FB
20.	M.G	5.69	FB

Table no. 3 Interpretation of initial results

At the level of 4th grade A, AVERAGE is 121.86 s	Standard deviation 6.093 s

Below we present the exercise program proposed for the level of 4th grade A which took place between September 13, 2021 - October 11, 2021 at the level of learning units with topics in psychomotor skills.

Table no. 4 The program of games at the level of the thematic link 4

Game description	**Timing**:	**Purposes:**	**Rules:**
1. Cops and thieves Two of the children have two cones in hand and chase the others (these are called "Cops"). The others, who are "thieves", must flee from them in order not to be touched. When a policeman touches a thief, the second one must freeze with his feet apart. In order to re-enter the game, another thief must pass between his legs. Every minute we will change the policemen so they will not get too tired. The policemen will try to catch as many thieves as possible, and the thieves will try to be careful not to get caught and save as many frozen colleagues as possible.	4-6 minutes	Development of spatial orientation, speed of movement, speed of reaction, attention and teamwork.	Touching is done softly on the back without bumps.

2. The traffic light Pupils move to the middle of the field or of the sports hall. The teacher has in his hand 3 cones of different colors: red, orange and green. When showing a color, students have different tasks to perform: -on green they run - on orange they run with an ankle play; - at the red color they sit in the squat position	2-4 minutes	Development of attention, speed reaction and spatial orientation.	It is necessary for students to follow the rules of the game.
3. Tig on the lines of the field Pupils run on the delimited lines of the field / sports hall. Lines can be white, red, or other colors. The game starts at the teacher's signal, those who are the chasers have a cone of the same color in their hand. They chase their colleagues on the lines. When they touch a colleague, the touched one becomes the chaser (receives the cone) and runs after the others.	3-6 minutes	Developing agility, speed of execution and speed of movement.	The touch is as natural as possible, without hitting. Those who become the chaser are not allowed to immediately touch those who have just been the chasers.
4. The fish net The students are divided into 2 teams: fish and net. Those in the net team take on orange T-shirts and hold their hands. At the teacher's signal, the net begins to run the fish. When a fish is touched it joins the net. It is played until the last student is touched and then the net is changed.	3-7 minutes	Developing teamwork, agility and movement speed	The touch is as natural as possible, without hitting.

Final results: From October 11, 2021

Table no.5 Final results of the 5 x 5 m Shuttle test

4th grade A			
No.	Pupil's first and last name Boys	Speed	
		5X5m **I**	Score
1	A.N	6.38	FB
2	A.M	6.33	FB
3	B.A	6.39	FB
4	C.R	6.37	FB
5	C.I	6.31	FB
6	L.A	6.30	FB
7	N.L	6.30	FB
8	N.F	6.33	FB
9	O.S	6.35	FB
10	P.C	6.35	FB
11.	O.A	5.45	FB
12.	U.D	5.80	FB
13.	E.D	5.89	FB
14.	R.A	5.30	FB
15.	E.A	5.84	FB
16.	A.I	5.70	FB
17.	V.D	5.55	FB
18.	R.M	5.96	FB
19.	M.T	5.95	FB
20.	M.G	5.60	FB

Table no.6 Interpretation of final results

At the level of class IV A AVERAGE is 120.45 s	Standard deviation 6.0225 s
Difference between averages 1.41 s	Standard deviation 0.71 s

Table no.6 shows the final results and progress rates at the level of class IV-A progress rate 1.4 1%

4. Conclusions:

Following the final results obtained (from table no. 5) and the interpretation of the data, we notice that the use of motion games contributed to the improvement of the results of all participants.

The proposed 4-week program helped to optimize the parameters of psychomotor speed skill in the lower limbs at the age of 10 years.

There is a progress of 1.41% for the 4th grade A.

Therefore, the use of drive systems in the form of motion games has helped to improve the parameters of psychomotor speed skill, which leads to the validation of the research hypothesis.

Bibliography

1. Dragnea, A., Bota, A., Stănescu, M., Teodorescu, S., Tudor, V., Şerbănoiu, S., (2006), Educație fizică și sport - teorie și didactică - (*Physical education and sports - Theory and teaching* -), Ed. Fest, București;
2. Epuran M, (2005), Metodologia cercetării activităților corporale (*Methodology for researching body activities)*, Ed.Fest, București;
3. Gagea, A, (2010), Tratat de cercetare științifică în educație fizică și sport (*Scientific research treatise in physical education and sports),* Ed.Discobolul, București;
4. Niculescu, M. (2003), Metodologia cercetării științifice în educație fizică și sport (*Scientific research methodology in physical education and sports),* Ed. Bren, București;
5. Raţă Gl.,Raţă, B., (2006), Aptitudinile în activitatea motrică *(Skills in motor activity*), Editura Edusoft, Bacau;
6. Tudor, V.,(2005), Măsurare și evaluare în educație fizică și sport (*Measurement and evaluation in physical education and sports),* Ed.Alpha,București
7. Șchiopu U.,Verza E., Psihologia vârstelor (*Psychology of ages),* Editura didactică și pedagogică, R.A, București;

CHARACTERISTICS OF THE BEHAVIORAL MANIFESTATION OF PRESCHOOL CHILDREN (5 TO 6 YEARS OLD)

Onaca Diana[1], Potop Larisa[2], Șulea Roxana[3], Trușcă Mirabela[4], Ion Carp[5], Potop Vladimir[6]

[1] *"Maica Domnului" Middle School, Bucharest, Romania*
[2] *Chiajna Medical Center, Ilfov County, Romania*
[3] *"Viilor" Theoretical High School, Bucharest, Romania*
[4] *Middle School nr. 20, Bucharest, Romania*
[5] *State University of Physical Education and Sport, Chisinau, Republic of Moldova*
[6] *Department of Physical Education and Sport, University of Pitesti, Romania*

Abstract

The paper aims to highlight the characteristics of the behavioral manifestation in the 5 to 6 years old preschoolers. The study involved 20 children aged 5 to 6, corresponding to level 2 (upper group) from the half-day kindergarten attached to the "Maica Domnului" Middle School of Bucharest. The study was conducted throughout the 2020-2021 school year. The essential pedagogical tools, used for an individualized evaluation of education and learning, offered a series of behavioral manifestations, which identified both skills and difficulties of each child separately. In this regard, the sheet for assessing the individual progress of the child was applied at the beginning and the end of the 2020-2021 school year. The purposes of the early education at primary cycle level are related to 5 areas: 1) physical development, health and personal hygiene; 2) socio-emotional development; 3) development of language, communication and premises of reading and writing; 4) cognitive development and knowledge of the world; 5) abilities and attitudes in learning. Depending on the results obtained in the initial testing, a plan with improvement measures was proposed for each development area. The results of the study highlight the characteristics of the behavioral development indicators manifestation in the preschoolers aged 5-6 years. The analysis of the indicators specified in the sheet shows the individual behavioral development level of each child and the group level at the end of the preschool period. In this sense, the results of each assessed indicator highlight the characteristics of the behavioral manifestation of the children at this age, as a finalization of the preschool cycle.

Key words: *early education, areas of development, evaluation, ameliorative measures, preschool cycle*

1. Introduction

In a general sense, education – a fundamental institution of the society - can be defined as" any social activity aiming at the transmission to the individuals of the collective heritage of the society in which they live" (Furtună, 2007, p. 221). Early childhood education and care must be considered as the basis of education and training systems. A coherent early education in all the involved environments (family, kindergarten, community etc.) represents the necessary context for a balance between the socio-emotional aspects, learning and welfare (Pascari, 2015; Andrasciuc & Chirică, 2020).

The amazing progress of the contemporary civilization and the information explosion are also felt in the preschool education. This one has experienced, in the last decade, a continuous transformation and development in terms of content, methodology and educational technologies. Information and Communication Technology (ICT) can be considered an innovation within the early education institutions, used for educational purposes through means of presenting, storing and processing the information (Duminică, 2017).

Knowledge of the somato-functional particularities and behavioral manifestations of the preschool children is an absolutely necessary condition for the proper development of the instructional-educational activities in the preschool institutions. The preschool age is a period when important changes occur in the emotional life of the child. In this regard, the emotions and feelings of the preschooler accompany all the manifestations of this one, whether it is games, songs, educational activities or the fulfillment of the tasks given by the adults (Dascal, 2018; Istrate & Andrei, 2018; Potop et al., 2020).

The curriculum for early childhood education aims at the global development of preschoolers and emphasizes the importance of the development areas (Haheu-Munteanu & Bruja, 2020). The national curriculum for early education intends to achieve the update and restructuration necessary for the correlation with the provisions and recommendations included in the documents promoted at European level (CPET, 2019). The guidelines for the design and update of the national Curriculum, as well as the goals of early education have a holistic approach in view. They target the five areas of child development (in: *Learning and development standards for children from birth up to the age of 7*, Chișinău, 2013). Each indicator of manifestation shows the level of physical development, health and personal hygiene (Dascal, 2017, 2018); socio-emotional development (Boncu & Dafinoiu, 2014; Haheu-Munteanu & Bruja, 2020); cognitive development and knowledge of the world (Clichici, 2017; Voiculescu, 2003); development of language, communication and the premises of reading and writing (Cemortan, 2012); abilities and attitudes in learning (Cemortan, 2009).

The paper aims to highlight the characteristics of the behavioral manifestation in the 5 to 6 years old preschoolers.

2. Material and method

A number of 20 children of 5 – 6 years old, corresponding to level 2 – the upper group, participated in this research. The study was conducted in the half-day kindergarten attached to the "Maica Domnului" Middle School of Bucharest, during the 2020-2021 school year. The essential pedagogical tools were used to evaluate the children's education and learning. In this sense, the Individual Child Progress Assessment Sheet was used at the beginning and the end of the 2020-2021 school year.

The evaluation focused on 5 areas of development (Potop et al., 2020): 1) physical development, health and personal hygiene; 2) socio-emotional

development; 3) development of language, communication and the premises of reading and writing; 4) cognitive development and knowledge of the world; 5) abilities and attitudes in learning. Each development area was evaluated as follows: 5 points - A (achieved behavior); 3 points - D (behavior in development); 1 point - Ns (behavior requiring support).

Depending on the results obtained during the initial testing, a plan with ameliorative measures was proposed for each area of development.

3. Results and Discussions

The results of the development areas evaluation in the preschool children aged 5 to 6 are shown in the tables 1-5 and figures 1-5. This evaluation monitored the behavioral manifestation according to the analyzed indicators at the research end.

The area of physical development, health and personal hygiene includes 7 behavioral indicators with the following values at the end of the research: 87.8% - achieved behavior; 12.2% - behavior in development; without behavior that requires support. The formative-educational activity in the field of physical development, health and personal hygiene is carried out in the areas of Physical Education and Education for Health. The physical education organizing forms complement each other. At the same time, each of them achieves its specific objectives that determine the place of physical education in the structure of the kindergarten day (Dascăl, 2017).

Table 1 - *Physical development, health and personal hygiene* (n = 20)

LIA	**Test**	BI1		BI2		BI3		BI4		BI5		BI6		BI7	
		fn	%	fn	%	fn	%	fn	%	fn	%	fn	%	fn	%
BRS	**I**	-	-	-	-	10	50	-	-	-	-	6	30	-	-
	F		-		-	-	-	-	-	-	-	-	-	-	-
BD	**I**	11	55	11	55	10	50	11	55	13	65	7	35	11	55
	F	2	10	2	10	2	10	3	15	3	15	2	10	3	15
AB	**I**	9	45	9	45	-	-	9	45	7	35	7	35	9	45
	F	18	90	18	90	18	90	17	85	17	85	18	90	17	85

Notes: fn – frequency of cases; % - percent representation; level of indicator achievement; BI – Behavioral indicators; AB (achieved behavior), BD (behavior in development), BRS (behavior that requires support); BI 1 - the child climbs and descends the stairs, not alternating the legs and without support; BI2 - he/she makes puzzles of 3, 4, 6 pieces and can highlight; BI 3 - he/she demonstrates oculomotor coordination in construction games, in puzzles making, in inserting objects on a sewing thread etc.; BI 4- the child can identify the things that can be eaten and the others that cannot be eaten; BI 5- the child is interested in going to toilet and can use it regularly; BI 6 - he/she tells the adult when someone hits him or does something bad to him/her; BI 7 – Another particular behavior of the child.

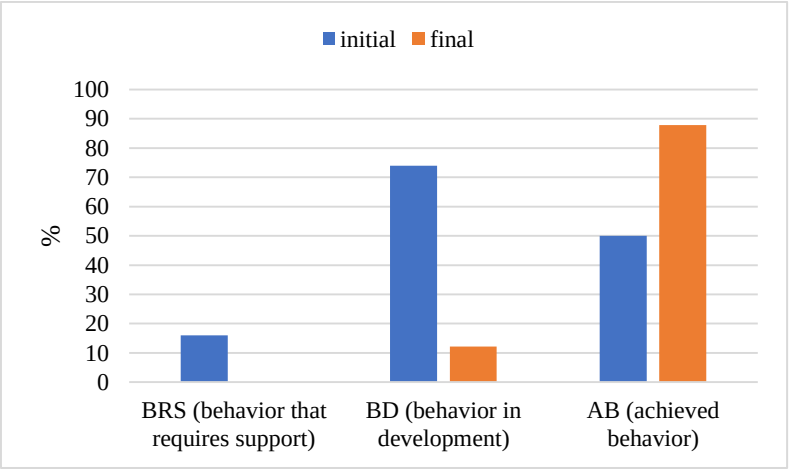


Fig. 1. *Physical development, health and personal hygiene*

At the end of the preschool period, the children display behaviors, such as:

- They carry out group/individual activities to get to know the body scheme;
- Various spatial orientation activities;
- They use the senses (sight, hearing, touch, smell etc.) in the interaction with the immediate environment;
- They coordinate their muscles while making diversified activities, specific to their age: games/exercises for practicing gross motor skills, fine motor skills but also the sensory and motor development;
- Participate regularly in physical activities: running, dancing, games or even sports;
- They practice, aided, the observance of some basic principles specific to a healthy diet; they have personal hygiene skills;
- Demonstrate that they can protect themselves from dangerous objects and situations.

The evaluation of the „Socio-emotional development" area of the preschoolers of 5-6 years old highlights 6 behavioral indicators with the following values at the end of the research: 85% (AB) – achieved behavior; 15% (BD); without behavior requiring support (Table 2, Fig. 2). The preschool age is a rather long period where significant changes occur in the emotional life of the child. Therefore, it was important to observe the emotions and feelings of the preschoolers in all their manifestations (either games, songs, educational activities or the fulfillment of the tasks received from adults) for clearly identifying the effects of this age. It is essential to mention that the emotions and feelings have a key role in the life of the children and exert a strong influence on their behavior. Emotion is what a person feels regarding an event important for him of for her (Boncu, & Dafinoiu, 2014; Haheu-Munteanu & Bruja, 2020).

Table 2 - *Socio-emotional development* (n = 20)

LIA	Test	BI1		BI2		BI3		BI4		BI5		BI6	
		fn	%	fn	%	fn	%	fn	%	fn	%	fn	%
BRS	**I**	1	5	-	-	11	55	-	-	-	-	6	30
	F	-	-	-	-	-	-	-	-	-	-	-	-
BD	**I**	10	50	12	60	9	45	11	55	13	65	7	35
	F	3	15	3	15	3	15	2	10	3	15	4	20
AB	**I**	9	45	8	40	-	-	9	45	7	35	7	35
	F	17	85	17	85	17	85	18	90	17	85	16	80

Notes: fn – frequency of cases; % - percent representation; BI – Behavioral indicators; BI 1 – the child interacts positively and plays with the adults; BI 2 - he/she plays next to other child; BI 3 – he/she follows the group routines (e.g. behavior when having a meal); BI 4 – tells his/her name and age, if asked; BI 5 – recognizes simple emotions (fear, joy, sadness); BI 6 – Other particular behavior of the child.

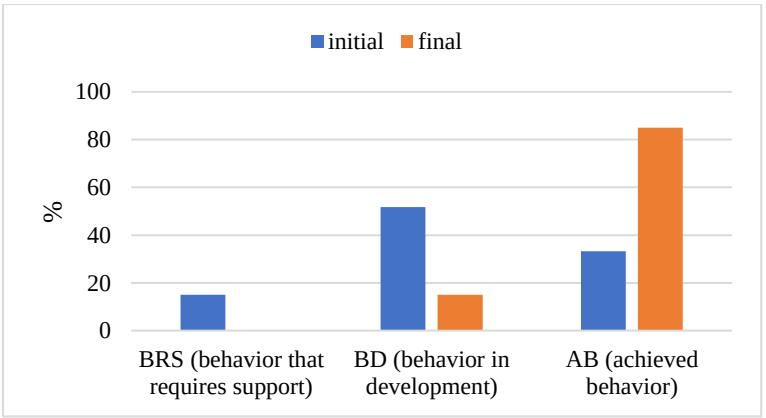


Fig. 2. *Socio-emotional development*

At the end of the preschool period, children have a series of behaviors, such as:

- They show trust in the adults they know, by practicing interaction with them;
- They demonstrate abilities in requesting and receiving help for age-specific problematic situations;
- They respect rules and understand the effects of these ones in terms of social relations, in familiar contexts;
- They practice, with support, the assumption of age-specific responsibilities, in different contexts;
- They show acceptance and understanding towards the other people from the immediate environment;
- Recognize and express basic emotions in response to musical pieces, literary texts, art pieces etc;
- Promotion of the self-image, presenting himself/herself as a unique person, with specific characteristics.

The results related to the „ Development of language, communication and premises of reading and writing" area refer to 5 behavioral indicators. At the end of the research, these indicators highlight the values as follows: 84% (AB) – achieved behavior; 16% (BD); no behavior that requires support (Table 3 and Figure 3). The anticipated results of some research demonstrated that not only the prerequisites for reading but also the ability to read (syllables, words and short sentences) can be built (without forcing children to attend school-type activities). Thus, the control experiment showed that: the games with letters can be considered an early stage of the process of learning to read in preschool period; the expected success can only be obtained by educating an indisputable curiosity and initiative; game methods can and must be included as a component not only in the activities of speech development but also in other activities recommended by the curriculum; the games with letters and the exercises for creating the reading and writing premises can be included as a component of various integrated activities (Cemortan, 2012).

Table 3 - *Development of language, communication and premises of reading and writing (n = 20)*

LIA	Test	BI1		BI2		BI3		BI4		BI5	
		fn	%	fn	%	fn	%	fn	%	fn	%
BRS	**I**	-	-	-	-	9	45	-	-	-	-
	F	-	-	-	-	-	-	-	-	-	-
BD	**I**	11	55	11	55	11	55	11	55	12	60
	F	3	15	3	15	3	15	2	10	3	15
AB	**I**	9	45	9	45	-	-	9	45	8	40
	F	17	85	17	85	17	85	18	90	17	85

Notes: fn – frequency of cases; % - percent representation; BI – Behavioral indicators; BI 1 – he/she acts appropriately on commands that include verbs (come, open/close etc.); BI 2 – the child formulates simple or developed sentences formed of 3, 4 words; BI 3 - „Reads" his/her favorite book to an adult or to himself/herself; BI 4 – the child describes what he or she drew/wrote or represented; BI 5 - Other particular behavior of the child.

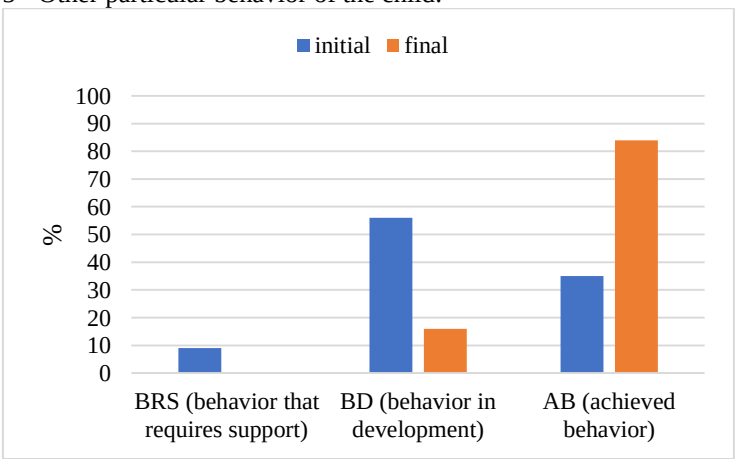


Fig. 3. *Development of language, communication and premises of reading and writing*

At the end of the preschool period, the children display behaviors as shown below:

- They practice, with support, the active listening to a message, in order to understand and receive it;
- Demonstrate understanding of an oral message, as a result of taking advantage of the ideas, emotions and meanings;
- They demonstrate the ability to clearly communicate their own ideas, needs, curiosities, actions and emotions (expressive communication);
- They respect the rules of correct expression, in different contexts of communication;
- They phonetically discriminate/differentiate words, syllables and sounds; they associate sounds with letters;
- Identify the presence of a written message; appreciate and take advantage of the written message in current activities;
- Assimilate some elements of writing and use various ways of graphic and oral communication to send a message.

The evaluation of the „ Cognitive development and knowledge of the world" area is based on 6 behavioral indicators that have the following values at the end of the research: 84.2% (AB) – achieved behavior; 15.8% (BD) – behavior in development; without behavior that requires support (Table 4 and Fig. 4). The essence of the Cognitive development and knowledge of the world „ concerns the children's skills and abilities to research, to experiment for learning how things work, how people interact with each other and with the environment, to show interest and care for the world around them, to recognize and use patterns and simple geometrical figures, to use numbers in everyday experience" (*Reference framework and Curriculum for early education*, 2015, p. 30). The contribution of children's performance evaluation methods to the „ Cognitive development and knowledge of the world" area in early education is due to each form of activity carried out in the early education institution. It is important that – at the end of each activity – the preschoolers improve their results and behave according to the mutually agreed and rationally motivated rules (Voiculescu, 2003; Clichici, 2017).

Table 4 - *Cognitive development and knowledge of the world* (n=20)

LIA	Test	BI1		BI2		BI3		BI4		BI5		BI6	
		fn	%	fn	%	fn	%	fn	%	fn	%	fn	%
BRS	**I**	-	-	-	-	8	40	-	-	-	-	6	30
	F	-	-	-	-	-	-	-	-	-	-	-	-
BD	**I**	12	60	12	60	12	60	11	55	14	40	7	35
	F	3	15	3	15	3	15	2	10	5	25	3	15
AB	**I**	8	40	8	40	-	-	9	45	6	30	7	35
	F	17	85	17	85	17	85	18	90	15	75	17	85

Notes: fn – frequency of cases; % - percent representation; BI 1- the child finds out and describes the similarity or difference between two objects of the same type (one ball is bigger than another, my skirt is the same as Maria's skirt etc.), BI 2 – the child uses the trial-and-error learning to solve

problems ; BI 3 – he/she counts 1-3/5 items; BI 4- identifies the round shape/circle; BI 5 – expresses the state of weather in relation to known phenomena ("Sun", "It snows", "It rains" etc.); BI 6 - Other particular behavior of the child.

When ending the preschool level period (from 3 to 6 years old), children show a series of behaviors, as follows:

- They identify possible answers/solutions to questions, problem situations and challenges in their own life and the life of the group of classmates;
- They carry out, in a guided way, simple environmental investigation activities, using age-specific tools and methods;
- Identify and name the shapes of the objects in the environment;
- Perform operations of sequencing, grouping, classification and measurement of objects;
- They solve problem situations, starting from sorting and representing some data, tools and methods;
- They identify and use characteristics of the living world, of Earth and Space;
- They describe some characteristics of the living world, of the Earth and Space.

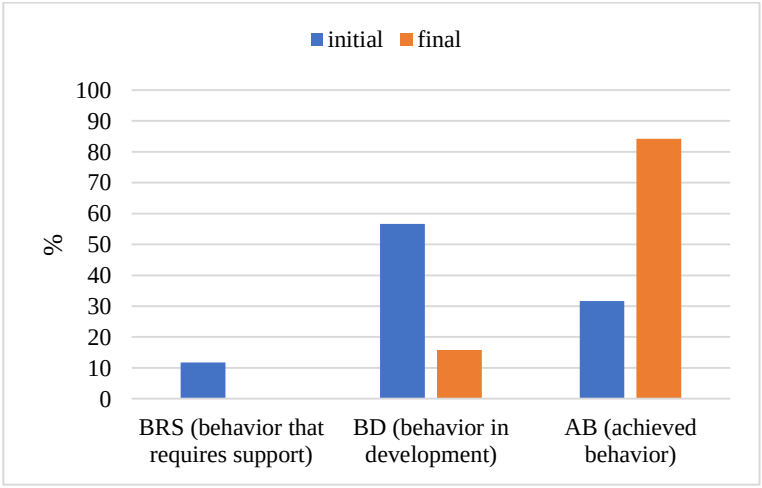


Fig. 4. *Cognitive development and knowledge of the world*

The evaluation results of the „ Abilities and attitudes in learning" area in the preschoolers aged 5-6 years include 6 behavioral indicators. At the end of the research, the values are as follows: 86% (AB); 16% (BD); without behavior that requires support (Table 5 and Fig. 5). The researchers from the Preschool Education department showed that the building of the basic learning skills in preschool period is a complicated and long-lasting process. It must be achieved gradually, throughout the preschool period, within the practical activities for playing, communicating and learning. This process requires the overall development of the motivational, intellectual, emotional and volitional spheres. The fundamental condition for successfully solving this problem is the family –

kindergarten – school partnership. The efficient implementation of this process requires the knowledge and application of the modern educational technologies by the adults concerned with the process of preparing the preschoolers for school (teaching staff and parents) (Cemortan, 2009).

Table 5 - *Abilities and attitudes in learning* (n = 20)

NÎI	Test	BI1		BI2		BI3		BI4		BI5	
		fn	%	fn	%	fn	%	fn	%	fn	%
Ns	**I**	-	-	-	-	10	50	-	-	-	-
	F	-	-	-	-	-	-	-	-	-	-
D	**I**	11	55	11	55	10	50	11	55	13	65
	F	2	10	3	15	3	15	4	20	2	10
A	**I**	9	45	9	45	-	-	9	45	7	35
	F	18	90	17	85	17	85	16	80	17	85

Notes: fn – frequency of cases; % - percent representation; BI 1 – the child asks questions about new people and unknown objects; BI 2 – he/she chooses an activity among several ones and carries out it for a short period of time (at least 5 minutes); BI 3 – the child tries, several times, a difficult task for a short period of time (to build a tower in 3-5 minutes); BI 4 – he/she pretends to be something or someone and uses his/her imagination while playing ; BI 5 - Other particular behavior of the child.

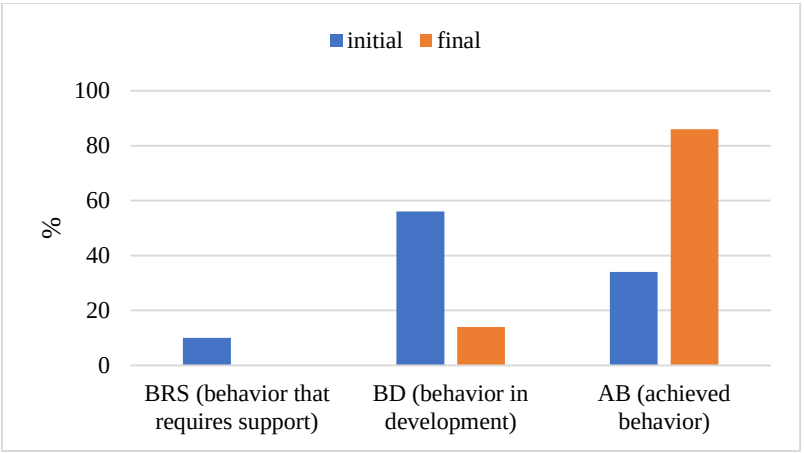


Fig. 5. *Abilities and attitudes in learning*

At the end of the preschool period (3 to 6 years old), children display several behaviors, like:

- They show curiosity and interest in experiencing and learning in new situations;
- They initiate learning activities and interactions with children or adults in the immediate environment;
- They perform the work tasks with consistency and pleasure;
- They integrate the help received for achieving the work tasks with which they encountered difficulties;
- They show creativity in different activities;

- They demonstrate creativity through artistic, plastic, musical and practical activities, in creative stories and conversations;
- Demonstrate rhythmic, harmonic musical sense through songs, games with text and song, dance etc.

Through the new Early Education Curriculum, a new model is adopted for establishing the educational goals, formulated in terms of competencies. The starting point of this model is the training profile of the child from early education, passing through the goals of the early education stage, in order to reach the competencies specific to each field of activity (Dascăl, 2018). In order to perform the environmental education during the early education, the teaching staff can use various age-specific methods deriving from the traditional, classic methods issued, verified and improved over time. The performances will be obtained only by complementing them according to the intended objectives, topics and clear content, with the help of teachers' creativity and didactic experience (Stoica, 2020).

4. Conclusions

The results of the study highlight the level of manifestation of children's behavioral development indicators, as the goal of the preschool cycle. The efficiency of the improvement measures implementation for each area of development influenced the indicators listed in the individual progress sheet. Thus, it was highlighted that 85.4% of the children have a behavior already achieved; 14.6% - a behavior in development; no case of behavior that requires support. Therefore, in this research the evaluation of each analyzed behavioral indicator provides valuable information on the orientation of the practices of the teachers/parents in relation to the optimal development of the children during this period.

Bibliography

1. Andrasciuc, V., & Chirică, G. (2020). *Grădiniţa–mediul educaţional favorabil socializării copilului preşcolar*. In Orientări axiologice ale constructivismului în educaţia modernă (pp. 23-27).
2. Boncu, Ş., Dafinoiu, I. (2014). *Psihologie socială şi clinică*, Iași, Editura Polirom.
3. *Cadrul de referinţă şi Curriculum pentru educaţia timpurie*. ME, 2015. Disponibil la: www.particip.gov.md
4. Cemortan, S. (2009). *Aspecte metodologice de pregătire a copiilor pentru şcoală prin formarea competenţelor elementare de învăţare şi a atitudinilor*. Studia Universitatis Moldaviae (Seria Ştiinţe ale Educaţiei), 5(25), p.47-49.
5. Cemortan, S. (2009). *Aspecte metodologice de pregătire a copiilor pentru şcoală prin formarea competenţelor elementare de învăţare şi a atitudinilor*. Studia Universitatis Moldaviae (Seria Ştiinţe ale Educaţiei), 25(5), 47-49.
6. Cemortan, S. (2012). *Formarea premiselor citirii şi scrierii în scopul socializării copiilor de vârstă timpurie*. Studia Universitatis Moldaviae (Seria

Ştiinţe ale Educaţiei), 9(59), p. 77-84.
7. Clichici, V. (2017). *Metode de evaluare a performanţelor copiilor în domeniul „Dezvoltarea cognitivă şi cunoaşterea lumii" în educaţia timpurie*. Evaluarea în sistemul educațional: deziderate actuale 2017. Conferința "Evaluarea în sistemul educațional: deziderate actuale", Chișinău, Moldova, 9-10 noiembrie 2017, p. 134-137.
8. *Curriculum pentru Educaţia Timpurie* – 2019 (CPET). MEN. Anexa la Ordinul Ministrului Educației Naționale nr. 4.694/2.08.2019.
9. Dascal A. (2018). *Repere teoretico-metodologice în pregătirea copilului pentru şcoală la domeniul „Dezvoltarea fizică, a sănătăţii şi igienei personale".* Curriculumul şcolar 2018. Conferința "Curriculumul școlar", Chișinău, Moldova, 7-8 decembrie 2018, p. 223-227.
10. Dascal, A. (2017). *Particularităţile specifice copiilor de 3-7 ani în cadrul domeniului „Dezvoltarea fizică, sănătatea şi igiena personală".* Managementul educaţional: realizări şi perspective de dezvoltare, Ediția 1, 2017. Conferința "Managementul educaţional: realizări şi perspective de dezvoltare", Bălți, Moldova, 27 aprilie 2017, p. 272-276.
11. Duminică, S. (2017). *Organizarea activităţilor de evaluare prin în cadrul instituţiilor de educaţie timpurie*. In Evaluarea în sistemul educațional: deziderate actuale (pp. 150-152).
12. Furtună, C. (2007). *Sociologie generală*. Bucureşti: Editura Fundaţia România de Mâine
13. Haheu-Munteanu, E., & Bruja, C. V. (2020). *Dezvoltarea socio-emoţională a preşcolarilor prin activitățile opționale din grădiniță*. In Calitate în educație-imperativ al societății contemporane (Vol. 1, pp. 359-364).
14. Istrate, A., Andrei, M. (2018). *Dezvoltarea socio-emoţională a copiilor preşcolari. Grădinița cu program prelungit nr. 28, Ploiești*. Grupa mare Îngeraşii.
15. Pascari V. (2015*). Proiectarea procesului educaţional în instituţia preşcolară*. Ghid metodologic. Ed. a 2-a (rev. şi compl.). Chişinău: S.n.
16. Potop L., Onaca D., Ciobanu ML., Șulea R., Potop V. (2020). *Characteristics of the behavioral development of preschool children.* Proceedings of the International Scientific Conference. „Actualities and Perspectives of Physical Education and Sport Sciences", 2020, Bucharest, p.53-60.
17. *Standarde de învăţare şi dezvoltare pentru copilul de la naştere pînă la 7 ani*. Ed. a 2-a. Chişinău: S.n. (Tipogr. „Sirius" SRL), 2013.
18. Stoica, B. G. (2020). *Forme și metode ale educației ecologice la nivelul educației timpurii*. In Calitate în educație-imperativ al societății contemporane (Vol. 1, pp. 335-338).
19. Voiculescu E. (2003). *Pedagogie preşcolară*. Ed. a 2-a rev. Bucureşti: Aramis

STUDY REGARDING THE USAGE OF MOVEMENT GAMES IN ORDER TO INCREASE THE EFFICIENCY OF PHYSICAL EDUCATION CLASSES DURING PRIMARY EDUCATION

Xenia-Carmen Ivanov, Lecturer, Ph. D., F.P.F.S.

Ecological University of Bucharest, Romania

Abstract

In Physical Education, motor coordination is important premise of learning motor skills properly at a higher level, rationally and in a creative manner and quickly adapting to different working conditions, who are specific to different branches of sports.

The motor coordination through its means has a great contribution to improvement of the motor background. The statement assumes that every lesson shall use movement games to assure a rich motor background, for the nervous activity to choose the best and most economical motor motion, thus the performance reaches a maximum. This in fact constitutes a motor quality of the human body, the skill, which is very important in the person's development in the environment. The more skill the individual possesses the more efficient he can engage in professional activities, as well as daily ones.

The children must be given a large variety of motor skills which they should use as soon as possible, in foreseeable activities, as well as future ones. This is taught based on the skill development. The more advanced the motor quality is, the easier it is to learn new moves, along with adapting to everchanging conditions.

For the exercises to be effective, for actions with increased difficulty, an important role is played by equilibrium, orientation, and coordination, in the case of movements who, developed at a higher level have a great amplitude in execution, precision while finishing, virtuosity, confidence of the execution and a minimal physical effort

Key words: *movement games, motor coordination, physical education class, primary education*

1. Introduction

The whole formation process, development and teaching of the motor coordination implies mastering complex motor actions from a coordination point of view.

Motor coordination is synonymous with skill, dexterity and prowess and are determined by the processes of guidance and adjustment of gestures. They make the athletes coordinate confidently their motor and unpredictable actions (adaptation) as well as learn relatively quickly sports gestures.

Being a complex quality, it includes all fundamental factors of movement in different quantities – speed, strength, endurance, coordination, joint mobility, sense of orientation, ability; there are several stages in the formation, education, and development of motor coordination skills:

▪ Ensuring precision in spatial coordination of movements without keeping count of time; the degree of correctness of movements simultaneously executed with different body parts prevails, to effectuate a given action.

▪ Correct and precise execution of all movement to perform the action in the shortest time.

▪ Execution of moves in various and unusual conditions, without mistake and at full speed.

Balance, coordination, and orientation exercises contribute to the development of courage, will and perseverance and thus to the formation of personality, triggering emotional reactions and particular mental states.

During physical education classes, it is necessary that teachers intensify activity in the direction of perfecting balance, orientation, and coordination through specific skill expansion exercises.

While teaching 8 to 10 years old, we need to account for somatic and physiological particulates at that age. Entering a new collective mark an essential change in social position as well as in the relationships with others.

2. Material and method

The scientific research methods used are:

1. Study of specialty literature and programs
2. Pedagogical observation
3. Experimental method
4. Statistical-mathematical method
5. Graphic representation of the results method

Starting with the premise that skill is a complex motor quality, whose manifestation contributes to the growth of moving capabilities and the rapid adaptation to ever-changing conditions, I have formulated the next hypothesis: using acrobatic exercises and movement games in physical education classes for primary school can refine in a greater manner balance, orientation and coordination of movements, qualities needed for a faster and more durable learning of skill and motor competence.

At this stage of development, the goal is to attract, train generally and sports orientation. That being said, we are trying to enrich the motor baggage of the children by forming new motor skills and abilities which can be used in the day-to-day life.

3. Results and Discussions

I have approached this problem theoretically as well as experimentally this problem at Ianca School, at grades I-IV, in close collaboration with the teachers B.P and C.E., I realized a selection from the grades III and IV and I formed an experimental group made up by 14 students who wanted to participate in this organized activity.

I effectuated the established tests with the groups, obtaining the initial data of the experiment. I planned out the means and objectives of the lessons during the experiment.

In order to highlight whether we had an increase in skill indexes, I performed two tests: the initial one and the final one.

I have set up and applied control tests, through which it can be measured as objectively as possible the value of these skill indexes. From the multitude of tests and exercises existent in specialty literature and according to personal ideas I have selected the next exercises and tests to appreciate with higher accuracy indexes of different skill components: balance, spatial orientation and coordination.

Tests for spatial orientation (s.o)

1) The subject is standing upright in the center of a circle graded from 0° to 360° having subdivisions of 10°. The circle has a radius of 50 cm. By jumping, the subject makes a turn in the air in longitudinal axis. The number of degrees that the subject covered is noted. The exercise is executed two times, once to the the left, and once to the right, after which we calculate the average of these two.

2) The subject is standing up, blindfolded. He is rotated 3x360° by the teacher after which he needs to walk a 3m distance to a target. The deviation to the left or the right from the center is noted.

Tests for balance (b)

1) The subject is walking on an upside down gymnastics bench. He needs to walk through the whole length of the bench so that he touches the opposite end with his foot, after that he walks the same distance backwards.

2) The subject is standing up and will execute the following motor actions: rolling on the mattress, running, by alternating steps in 6 concentrical circles at 0,5 meters from each other, stopping with one foot in an arabesque position.

Tests for coordination (c)

1) Starting from a standing position, in front of two gymnastics benches placed longitudinally, parallel to each other, the subject walks with a foot on each bench, jumps with damping, leads a ball on a 5m distance, stops the ball in a circle followed by a roll, passes by a flag and comes back and kicks the ball with the foot so that it goes through a goal (1/1m) situated at 3 meters laterally. The subject comes back to the starting point. The time is written down.

2) From the standing position, we have rolling on a mattress, running, with the legs alternating in 4 drawn circles (concentrical and alternating, at 0,5 meters from each other), 5 meters run and a jump to touch a ball held at a convenient height, after which 5 meters backwards run follows. The time is written down.

The experiment was based on the selection of gymnastic tools to develop spatial orientation, balance and coordination. Through the experiment, during the Physical Education class there have been combined elements from basic gymnastics, means of aerobic gymnastics and movement games.

Because the work wasn't done with the witness group the appreciation was made on a 14 children sample. For the analysis of the two tests, I have used the method of "meaning of the difference between data string in corelated samples" for each exercise.

Results:

It is clear from Fisher's table that, with a probability of 98% the growth of performance is due to exercises specific to the gymnastics used in the Physical Education class for beginners in football.

From the statistical-mathematical analysis of the initial and final results it turned out that, according to the calculations, at all the exercises (spatial orientation, balance and coordination) we have an increase of performance indexes, which is due to the use of movement games during Physical Education classes, with a probability between 98% and 99%.

Table 1 - *Initial tests for appreciating space orientation, balance and skill*

No.	Patient	***Orientation in space***		**Balance**		**Coordination**	
		OS1	**OS2(cm)**	**E1 (s)**	**E2 (s)**	**C1(s)**	**C2(s)**
1	B.N.	280^0	40	10,1	3,4	16,3	8,4
2	C. E.	225^0	20	8,9	2,8	24,1	4,9
3	C. V.	225^0	60	7,8	4,5	15,7	4,4
4	F. V.	270^0	60	5,1	5,2	11,6	5,8
5	G. B.	265^0	20	6,8	2,3	11,2	4,5
6	N. M.	295^0	80	6,0	2,4	10,6	4,2
7	P. F.	180^0	70	6,5	2,2	13,7	5,7
8	P. I.	260^0	10	8,2	7,0	11,2	5,4
9	P. I.	315^0	30	7,4	2,1	12,0	4,9
10	T. M.	355^0	50	6,5	4,6	15,5	5,5
11	T. M.	280^0	70	5,6	2,3	11,5	4,3
12	T. S.	290^0	60	7,4	2,1	12,8	4,7
13	V. A.	260^0	90	5,9	2,3	12,4	5,8
14	Z. I.	300^0	10	5,5	2,2	14,2	4,7
Mediate		$271,42^0$	47,85	6,98	3,24	13,77	5,21

Accordingly, at the SO1 test we had an increase of just 2,35%, while at the SO2 test, we saw an increase of 15,52%. Thus, we can state that the indexes of spatial orientation improved, from this it follows that further use of movement games in the Physical Education class leads to an increase in these indexes.

Table 2 - *Final tests for the assessment of space orientation, balance and skill*

No.	Patient	*Orientation in space*		Balance		Coordination	
		OS1	OS2(cm)	E1 (s)	E2 (s)	C1(s)	C2(s)
1	B.N.	290^0	30	8,1	4,4	14,6	6,4
2	C. E.	235^0	15	7,9	1,8	21,1	4,4
3	C. V.	240^0	50	7,8	6,5	13,7	5,4
4	F. V.	280^0	45	6,1	7,2	11,1	4,8
5	G. B.	265^0	20	5,8	3,3	10,2	4,5
6	N. M.	300^0	70	5,5	2,4	11,6	4,7
7	P. F.	190^0	60	5,5	2,2	12,7	4,7
8	P. I.	275^0	20	6,2	10,0	11,7	4,9
9	P. I.	320^0	25	6,4	2,1	11,0	4,4
10	T. M.	335^0	40	5,5	6,6	13,5	4,5
11	T. M.	285^0	55	6,6	3,3	11,0	4,3
12	T. S.	300^0	55	5,4	3,1	10,8	4,2
13	V. A.	275^0	75	5,4	2,3	11,4	4,8
14	Z. I.	300^0	20	5,0	3,2	12,2	4,2
Mediate		$277,80^0$	41,42	6,22	4,17	12,59	4,71

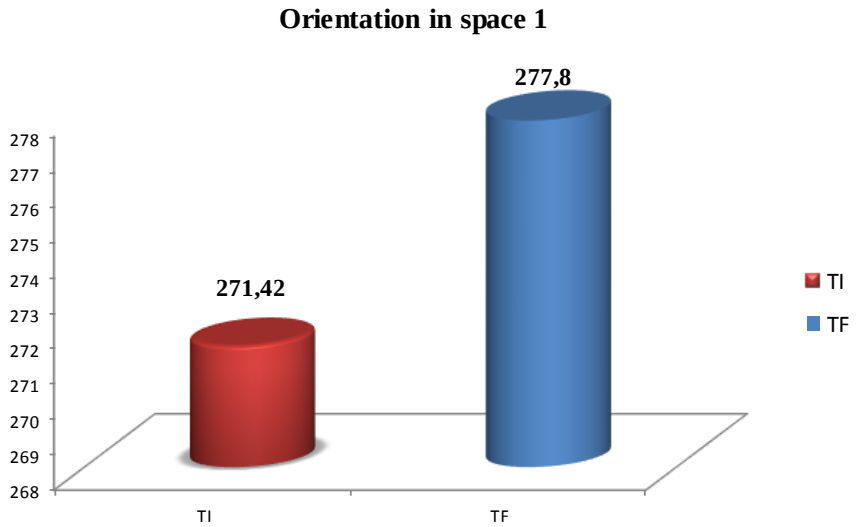


Figure 1. - *Graphic difference of initial and final tests*

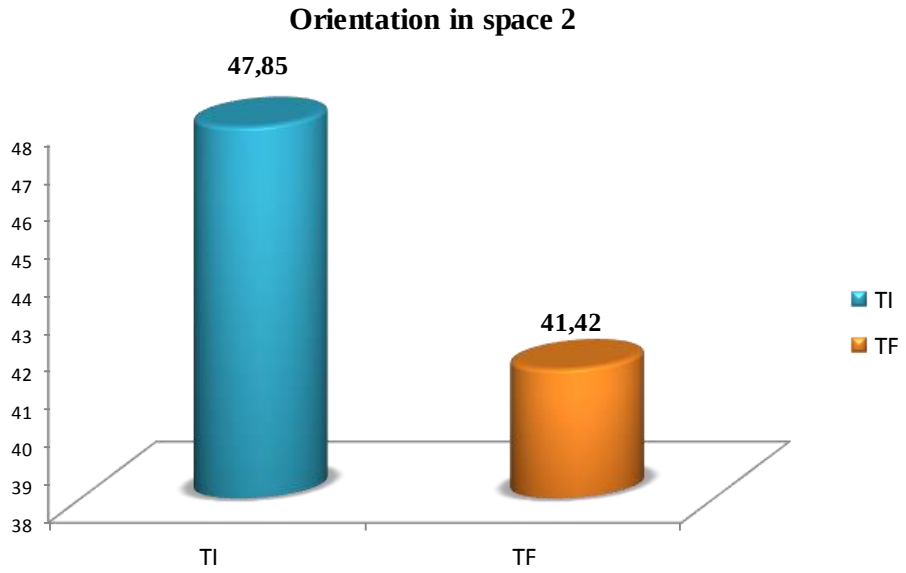


Figure 2. - *Graphic difference of initial and final tests*

At the B1 test we had an increase of 12,21%, but the most important growth was made at B2 test, where the indexes showed a 35,8% rise. So, we deduce that balance can be developed in a large manner at this age, the children proving a good adaptability.

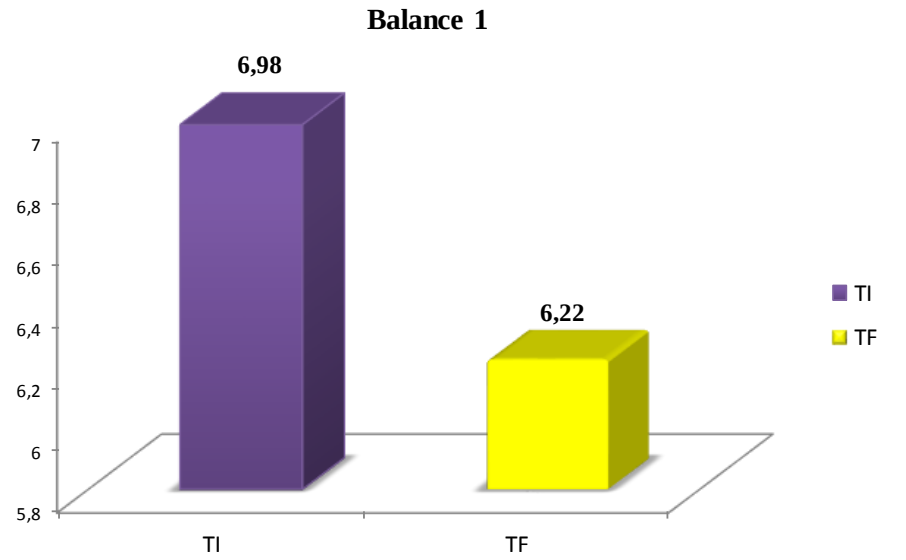


Figure 3. - *Graphic difference of initial and final tests*

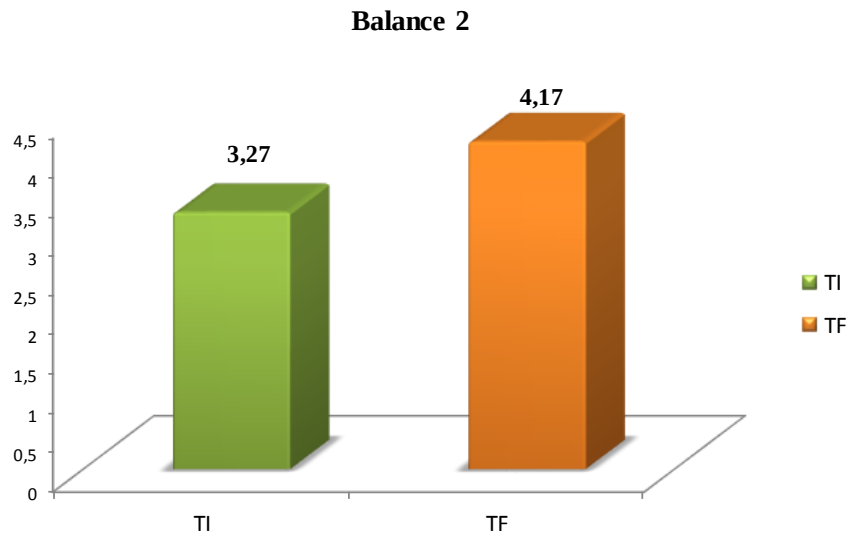


Figure 4. - *Graphic difference of initial and final tests*

The coordination exercise outlined a 9,37% increase at the C1 test, and for C2 an 10,6% growth. Hence, we can also say that for coordination, using movement games has had a benefic outcome in developing this quality.

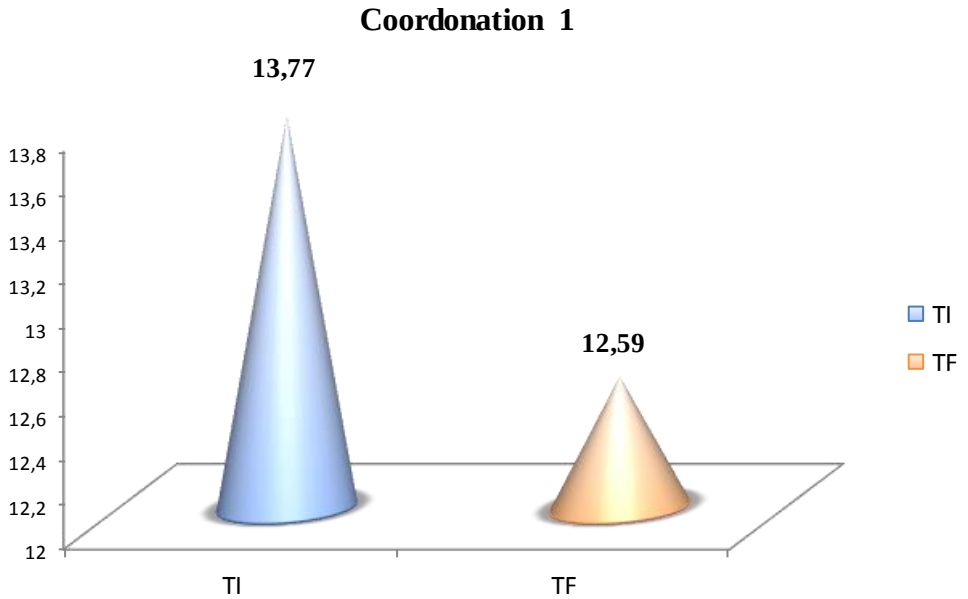


Figure 5. - *Graphic difference of initial and final tests*

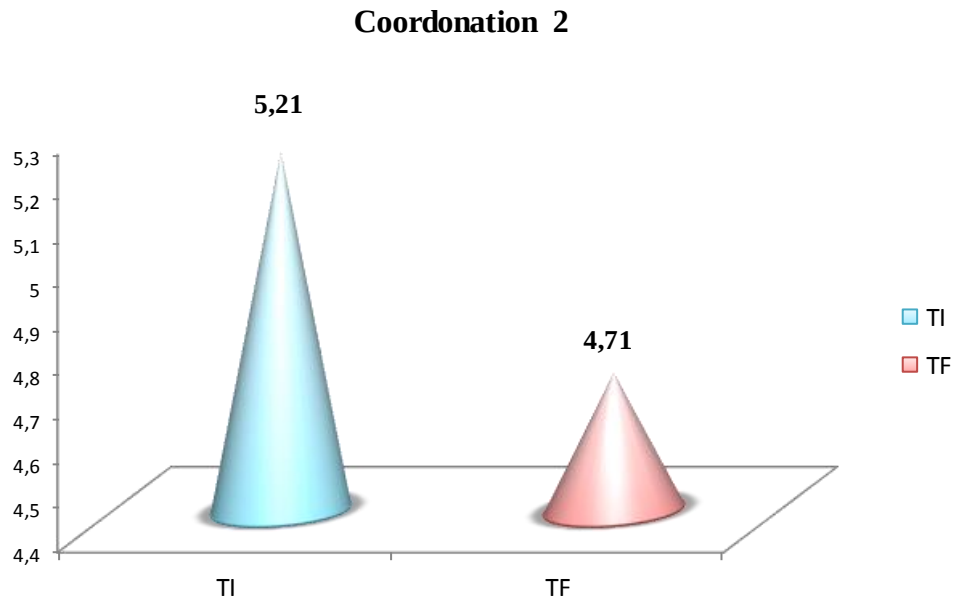


Figure 6. - *Graphic difference of initial and final tests*

4. Conclusions

The usage of movement games, as they were applied and how it follows from this paper, cotributes to the developement of balance, spatial orientation and coordination of the movements necessary to the introduction of sports to children.

The development of motor capacities, dexterity, needs to be carried out on an optimal background of neuro-muscular excitability, not on a fatigue background. Therefore, movement games which target the development of dexterity must be used at the beginning of the lesson as factor in assuring learning in optimal condition.

The atractiveness of movement games has the role of making children interested and helping conscious participation in the process of training. The possibility of watching every kid developing his motor capacities makes possible judging the real dimension of the qualities of each subject.

Gymnastics exercises, movement games and applicative exercises may be chosen, and the teacher has the possibility of using the most efficient exercises in order to reach precise targets.

The stages where gimastics exercises and movement games are the best is when, because of the weather situation, it is not recommended to work with the children outside. So the training is continuous with the goal of achieving harmonious physical developement as well as aquiring basic motor skills who are also practical.

While teaching 8–10-year-olds special attention will be paid, because this is the optimal age, to learning the basic motor skills, with a big emphasis on spatial orientation, balance, and coordination.

Bibliography

1. BAROGA, L. (1984) – „Educarea calităţilor fizice combinate", Sport-Turism publishing house, Bucharest.
2. CUCOŞ, C. (2000) – „Educaţia. Dimensiuni culturale şi interculturale", Polirom publishing house, Iaşi.
3. DRAGNEA, A. (1984) - „Măsurarea şi evaluarea în educaţie fizică şi sport", Sport-Turism publishing house, Bucharest.
4. MOANŢĂ, A.D. (2000) - „Pregătirea fizică în jocul de baschet", Pro-Editura, Bucharest.
5. POPESCU, F. (2003) – „Metodica învăţării tehnicii jocurilor sportive", Fundaţia România de Mâine publishing house, Bucharest.
6. PREDESCU, T., MOANŢĂ, A.D. (2001) – „Baschetul în şcoală - instruire, învăţare", Semne publishing house, Bucharest.
7. TUDOR, V. (1999) – „Capacităţile condiţionale, coordinative şi intermediare, componente ale capacităţii motrice", Rai publishing house, Bucharest,
8. TUDOS, ST. (1993) – „Elemente de statistică aplicată", IEFS, Bucharest.

THE INFLUENCE OF PRACTISING SPORTS GAMES ON THE MOTOR DEVELOPMENT OF PRIMARY SCHOOL STUDENTS

Florin Suciu[1], Nicoleta Leonte[2*], Iancu Rachita[3], Monica Virginia Cojocaru[4], Popescu Ofelia[5]

[1] *Livingwell Company, Tipografilor 29, Bucharest 013714, Romania*
[2,3,5] *University Politehnica of Bucharest, Splaiul Independenței 313,060032 , Romania*
[4] *Ecological University of Bucharest, Vasile Milea 1G,Bucharest ,061341, Romania*
e-mail : florinsuciu76@yahoo.com

Abstract

By definition, sports games have an attractive formative potential at all levels of society. Introduced into school physical education lessons, the formative directions and valences of sports games receive the content of instructive-educational and operational objectives, which are then put into practice.

The situations that ask children to establish certain relationships with each other and adopt a behaviour depending on what others do as either partners or opponents is a social-role game. For this reason, it is rightly considered that such games contribute to the practice and development of interpersonal behaviour and the individual's social maturation.

Keywords: *sports games, physical education, primary education*

1. Introduction

As a main means of school physical education along with athletics and gymnastics, the sports game must be subordinated to the organisational framework provided by the physical education subject included in the common core and the school schedule, while keeping its characteristics and identity. In this situation, each sports game should incorporate new forms of practice that are compatible with the school conditions but especially with the requirements of the physical education curriculum.

In physical education lessons, it is necessary and possible to use with maximum efficiency those forms of game with a reduced number of players on a small-sided field, which can be fully and quickly practised by all students in a classroom, as if they were participating in a dynamic or movement game. In this situation, the sports game with a reduced number of players on a small-sided field involves an assessment scale for the difficulties of practising dynamic games and sports games, but which is closer to the former ones especially in younger students.

Repeated practice under conditions of autonomy with maximum motivation and physical engagement involves using, as part of the physical education lesson, competitions with several teams mainly organised in the tournament system,

where each team plays against all the other participating teams. Producing rankings and final assessments requires the existence of game and competition regulations, which are different in each module.

All these new elements must be included in physical education programmes by grade and level. Practically, the programmes will have to provide concretely, according to the grade, what forms of game with a reduced number of players on a small-sided field will be practised in the third grade, in what competition and with what content (model, fundamental structures and game rules).

The modular approach (in taught lesson systems) to sports games during physical education lessons can provide an appropriate organisational-methodological framework so that the last 4 to 6 lessons in the module can be reserved for competition as a necessary form to exploit the formative potential of the sports games in school physical education.

Researchers (Rocha et al., 2016, Williams, 2004, Catalin, C., 2021, Aktug et al., 2021) believe that playing individual and team sports has a positive impact on the development of motor skills. In the opinion of Smith and Thelen (2003), motor performance at young ages seems particularly fragile and context-dependent, in the sense that motor development depends on children's growth and maturation, but it is also strongly influenced by environmental conditions.

Studies (Dimech & Seiler, 2011) have shown the important role of team sports in child anxiety.

Through this paper, we aim to make an analysis of the role played by sports games in the development of motor skills of primary school children and their importance in the educational process.

2. Material and method

2.1. Working hypothesis

In correlation with the objectives, tasks and prerequisites of the study, we established the following working hypothesis: Acting by means specific to sports games (basketball and football), which are adapted to the growth and development characteristics of students, ample effects are obtained on their motor ability, in the sense of improving the motor potential of primary school students.

2.2. Research methods

In order to study the complex issue of improving students' motor performance through sports games that include means taken from basketball and football, the following research methods were used: bibliographic documentation, pedagogical observation, test method, mathematical and statistical method, and graphical representation method.

2.3. Participants

The group participating in the experiment is made up of third-grade students (9-10 years old) from Middle School no. 66 in Bucharest.

The experiment group was formed by randomisation (using the random selection technique) and included 27 students aged 9 to 10 years. In psycho-

pedagogical/methodological research where participants cannot be selected without the risk of rendering incomplete the numbers of students in the classrooms, the "classroom" is also taken as an experiment group, considering that the "chance" factor has acted in the initial establishment of the classroom (Epuran, 2005, p. 260).

2.4. Tests applied

In order to quantify the results obtained from this study, we performed measurements and applied a series of assessment tests:

- Anthropometric state:

- Height (stature) – is measured between the vertex and the floor. The participant will stand with the back straight against a wall; the vertex is marked with a square: one of its sizes is placed on the vertex, and the right angle, on the wall (m);

- Weight – is determined with an electronic scale (kg);

- Span – arms outstretched sideways and parallel to the ground are measured by the distance between the tips of the middle fingers (m).

General motor tests

- 25 m speed run. Standing behind a starting line; at the sound signal, running at maximum speed to the opposite line that must be crossed with both feet; the test is performed twice; the best time is recorded (s).

- Standing long jump. Standing with feet slightly apart behind a line; long jump with two-foot take-off; two jumps are performed and the best performance is recorded (m).

- Endurance run: 400 m (girls) and 600 m (boys). The test is performed once, recording the time achieved.

- Specific motor tests

- Basketball route – rolling the ball on the ground (5 m) – dribbling between 4 cones (8 m) – standing shot to the basket

- Football route – running (5 m) – taking the ball – dribbling between 5 cones (10 m) – shooting to the goal

- Standing throw to the basket, perpendicular to the basket – 4 m (how many baskets are scored in 5 throws)

- Shot to the goal, perpendicular to the goal – 7 m (how many goals are scored in 5 shots)

2.5. Design and procedure of the study

The need to increase the efficiency of the intervention programmes used in the research has led us to take into account the following aspects:

- Education for movement, which is not only a necessity but even a condition of human existence, given that physical education, as an integral part of general education, is based on human movement and serves to the improvement of people's physical and mental condition, harmonious physical development and maintenance of health.

- Characteristics of the physical education lesson (duration of the lesson – 45 minutes, topic addressed).
- Differentiated treatment of students according to gender (programmes are designed for boy and girl students aged between 9 and 10 years).
- Physical education translates into individualised work, in the sense that boys play football, and girls play basketball. Using simple and attractive means that are easy to perform will engage the groups of students participating in the research.

Place and duration of experimental research

The research was conducted at the Middle School no. 66 in Bucharest from September 2018 to April 2019 during 17 weeks, corresponding to 34 physical education classes.

The experiment took place within the physical education lessons of third-grade students, who attended two classes per week.

During student training, the means used were in the form of the game, with basketball and football elements.

This applied experimental research aims to establish the pedagogical and educational reality in order to improve it.

3. Results and Discussions

Through this study, we wanted to find out whether there were significant differences between the two groups (experiment and control) at the end of the experimental intervention, after applying action systems based on the means of basketball and football in order to improve the motor performance of primary school students.

The statistically processed data for basketball-specific motor tests indicate an improvement in both the technical execution time and the precision of throwing to the basket. Thus, the mean difference for the *"basketball route*" is 0.67 units, being statistically representative according to Student's test: t = 5.9539, p = 0.0001 (Table 1, Graph 1).

Table 1 *Statistical data on basketball-specific motor tests*

Statistical tests	**Basketball route**		**Free throws**	
	IT	FT	IT	FT
Mean (x)	13.44	12.77	1.88	3
Standard deviation	0.786	0.658	0.696	0.707
Coefficient of variation	5.84	5.15	3.71	2.36
Student's test	t = 5.9539 p = 0.0001		t = 4.1707 p = 0.0001	

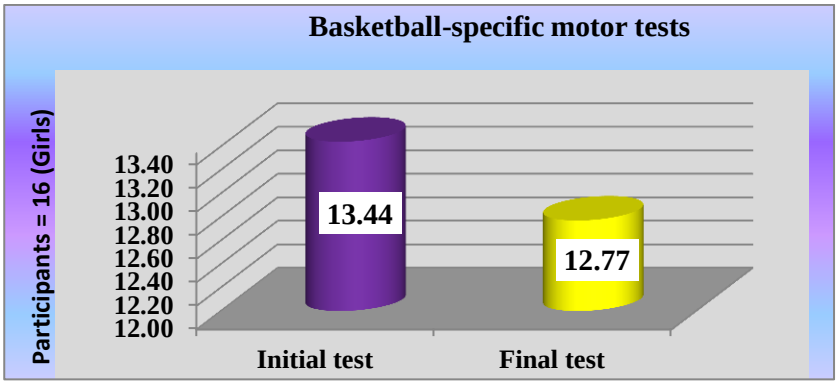


Figure 1. *Average results for "basketball route"*

Between the two tests, the results for *"free throws"* indicate an increase of 1.12 units, which is statistically significant according to Student's test: t = 4.1707, p = 0.0001 (Table 1, Graph 2).

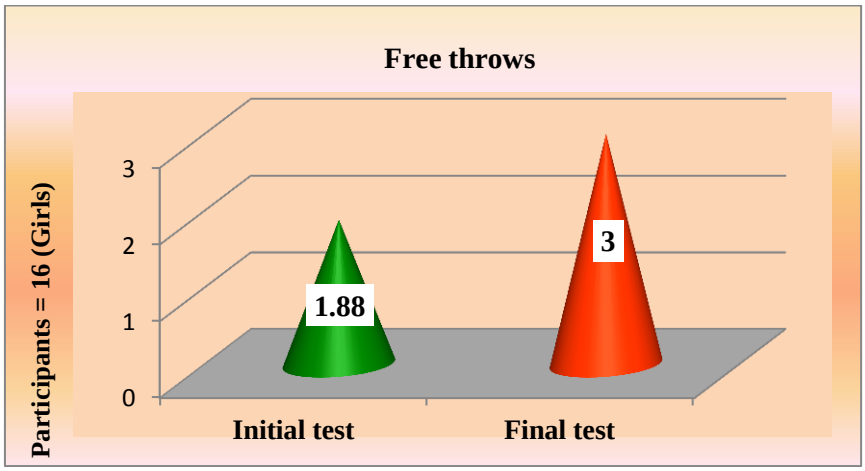


Figure 2. *Average results for "free throws"*

The statistically processed data for football-specific motor tests show an improvement in both the execution time of the route and the precision of shooting to the goal (Table 2).

Table 2 *Statistical data on football-specific motor tests*

	Football route		**Free kicks (7 m)**	
	IT	FT	IT	FT
Mean (x)	13.44	12.77	1.88	3
Standard deviation	0.786	0.658	0.696	0.707

Coefficient of variation	5.84	5.15	3.71	2.36
Student's test	t = 6.3539 p = 0.0001		t = 5.2607 p = 0.0001	

Between the two tests, the results for *"football route"* indicate a decrease of 0.77 units, which is statistically significant according to Student's test: t = 5.9539, p = 0.0001 (Table 2, Graph 3).

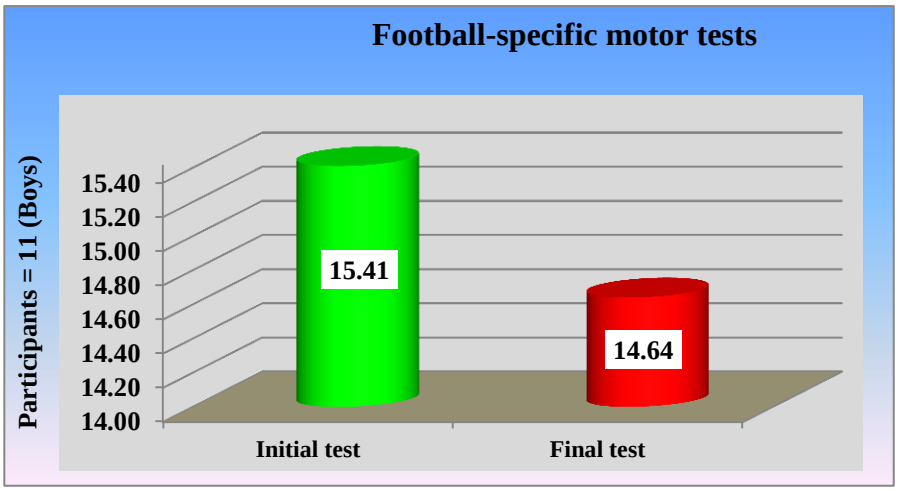


Figure 3. *Average results for "football route"*

4. Conclusions

Through such games, psychomotor skills are educated, emotional satisfactions are obtained, the competitive and cooperative spirit is nurtured, group friendships are formed and game rules (but especially their observance) are learned.

For this reason, the optimisation of physical education activity proposes the readjustment of goals, content objectives and requirements for this subject through a much greater share of motor skills and abilities in the lesson, which depends on the concrete conditions of the school and the current social demands.

There is a need for physical education to include several elements and techniques specific to sports games, which represent a system of highly effective means, otherwise students would be deprived of an activity that, as it has been found out, arouses a particular interest among them.

Learning and practising various sports branches and events should be a desideratum for all students, not just those with special skills.

The research results confirm the hypothesis of the study, namely that the teaching of physical education and sport activity through the methodology that mainly includes sports games, but especially competitive ones, leads to the

development of psychomotor skills, a complex ability that can be positively exploited in order to train and develop students' personality.

Acknowledgements

In this study all the authors had an equal contribution and are the main authors.

Bibliography

1. Alıncak, F. (2016). Attitudes of secondary school students including physical activity involving playing games. *European Journal of Physical Education and Sport Science*,1-11
2. Aktug, Z. B., & Iri, R. (2018). The Effect of Motor Performance on Sportive Performance of Children in Different Sports Branches. *Asian Journal of Education and Training*, *4*(2), 75-79.
3. Catalin, C. V. (2021). Study on the effectiveness of basketball dynamic games and relays for improving velocity in primary school children. *Ovidius University Annals, Series Physical Education and Sport/Science, Movement and Health*, *21*(2 SI), 240-244.
4. Dimech, A. S., & Seiler, R. (2011). Extra-curricular sport participation: A potential buffer against social anxiety symptoms in primary school children. *Psychology of Sport and Exercise*, *12*(4), 347-354.
5. Epuran, M., (2005). *Metodologia cercetării activităţilor corporale*, Bucureşti: Ed. Fest, pg. 116.
6. Rocha, H., Marinho, D., Jidovtseff, B., & Costa, A. (2016). Influence of regular soccer or swimming practice on gross motor development in childhood. *Revista Motricidade*, *12*(4), 33-43.
7. Smith, L. B., & Thelen, E. (2003). Development as a dynamic system. *Trends in Cognitive Sciences*, *7*(8), 343–348.
8. Williams, Kathleen, (2004). What's Motor Development Got to Do with Physical Education?, Journal of Physical Education, Recreation & Dance, 75:6, 35-39.

DEVELOPING THE PRACTICAL LEARNING SKILLS OF THE PHYSICAL EDUCATION FACULTY MA STUDENTS WITHIN THE MANAGERIAL PRACTICE INTERNSHIP

Amelicichin Ecaterina [1], Cireș Victoria [2], Jardan Corina [3]

[1,2] *State University of Physical Education and Sport, 22 Andrei Doga Street, Chisinau, Republic of Moldova*
[3] *Theoretical High School "Mihail Sadoveanu", 5 Aerodromului Street, Chisinau, Republic of Moldova*

Abstract

Learning through practice is a method of training students in order to form the skills needed to become valuable employees or responsible entrepreneurs. Thus, within the managerial practice, the students apply the studied notions interdisciplinary and realize their deepening in a functional system, university or specialized department and at the same time the didactic approach is created by the practice head, to approach and apply new concepts, useful in organizing and leading a business in the field of sports. Internships are a mandatory part of the educational process and are carried out in order to deepen the theoretical knowledge gained by students during the years of study and skills training established by the National Qualifications Framework. Being a main element of the educational process and of the professional activity, the internship ensures the formation of professional competencies and the accumulation of experience regarding the organization and realization of the activities in the professional field. The success of graduates in the labor market will depend, to a large extent, on the degree to which they will know the specifics of their professional activity. As a result of the internship, the student - the future specialist can determine the perspectives of professional achievement in the chosen system of specialization, and the results of the practice justify the assignment of the graduate professional qualification.

Key words: *learning, managerial practice, skills, marketing research.*

Introduction

According to Vermunt J.D., teaching and learning are interdependent processes that can adjust to each other by adapting the teaching strategies used by the teacher to the way students use and regulate their learning activities [10]. Teaching thus involves guiding students in the process of choosing learning strategies that allow the building, modification and use of knowledge. Such teaching is oriented towards learning processes and implicitly towards the student because it focuses on the processes through which knowledge is built and then applied in practice. Most frequently, studies that have addressed this issue have found an increase in understanding, metacognition, and self-regulation [8, 9]. Moreover, studies show that meaning-oriented learning is positively associated with the indicators of study effectiveness, even in the case of scores on exams containing factual questions. Reproductive learning has shown negative correlations with outcome measurement systems. Non-directed learning has shown for the most part strong negative relationships with exam performance, while in

most cases; application-oriented learning has shown a lack of a relationship with academic success. In addition, the regular examinations of the first years of higher education hardly manage to capitalize on students' ability to use critical, analytical and concrete processing strategies [4, 10].

The objective of the research is to determine the level of practical skills development to MA students, in objective way of evaluating the efficiency of interdisciplinary learning activities focused on the study of marketing research, conducted through various technologies. The evaluation at the level of the cycle II, the specialization "Education, management and marketing in sports" within the development of managerial practice, also provides the necessary information for the adoption, on a scientific basis, of measures to establish continuity in the education and training of students.

The aim of this research is to analyze the extent to which a managerial practice program completed by master's students in the specialty "Education, management and marketing in sports" can contribute to learning efficiency and lead to changes in students' opinions and conceptions about learning in a constructive way.

Another objective derived from this is to verify the impact of such a program on the development and improvement of students' learning strategies and learning styles aimed at understanding and self-regulated learning. It is known that the evaluation aims at the efficiency of education and training in terms of the ratio between the projected objectives and the results obtained by the students through their activities. The evaluation follows the consequences of the action taken by the teacher in the process of forming the general and specific competencies of the students [2, 4]. Thus, three directions of evaluation can be expected through appropriate teaching strategies, concluding with assessments on the internal functioning of the educational-instructional action, namely: evaluation of attitudes, knowledge and skills held by students in Cycle II.

Results

Through the formative experiment and starting from ***the general hypothesis*** according to which: the integrated design and implementation of an optional educational program within the managerial practice, with emphasis on the individual activity of the masters in marketing research, will determine the development of practical skills, written and oral communication, attitudes to enhance the act of learning, by capitalizing on complex interactions within managerial practice.

The objectives monitored by us during the internship were mainly pedagogical ones focused on development:

- personal skills, respectively: efficiency at work, flexibility, results orientation, seriousness, appropriate behavior, desire to learn continuously, time management in order to streamline the activity at the organizational level;

- social skills (interpersonal communication, teamwork, problem solving, leadership) for the development of professional activity.

Also, the economic objectives that can be achieved through the activities of students that can lead to the acquisition of skills in order to anticipate the needs of customers by promoting an appropriate offer in tourism were monitored; their ability to develop marketing strategies tailored to specific market segments; the ability to properly manage the human resources of a sports or tourism entity.

According to the university curriculum of the managerial practice within the Physical Culture Management Chair (the specialized chair of the State University of Physical Education and Sports responsible for organizing and carrying out the respective internship) its objectives are concretely established as follows:

The internships of managerial practice aim achieving the following objectives:

❖ Familiarizing students with different leadership and management structures in the field of physical education and sports such as:

- associations and sports clubs;
- sports schools of different ranks;
- sports federations.

❖ Consolidation and deepening of leadership and management skills, as well as their transformation into managerial skills and abilities.

❖ Training the ethical and leadership qualities of the manager according to contemporary requirements.

❖ Strengthen the experience of directing and organizing future managers in the current links.

❖ Strengthening the professional interest, as well as stimulating the interest for independent and creative activity.

❖ Development of managerial skills and the ability to apply the acquired knowledge in various conditions.

❖ Accelerate the process of enrolling students in the respective position and subdivision.

❖ Deepening the practical knowledge through the profile activity.

❖ The study by the coordinator and the leader of the internship of the capacities and aptitudes of the students in order to frame them efficiently in the field of specialization of the chosen profession.

Starting from the *hypothesis* study, supplemented by the fact that a managerial practice program completed by MA students in the specialty "Education, management and marketing" can contribute to streamlining learning and increasing the use of learning strategies focused on practical activities and the application of knowledge accumulated in the course "Marketing Research" we conducted research in order to identify the skills that can be acquired by students at the end of the internship with reference to the study discipline "Marketing Research".

From a functional point of view, the general hypothesis can be broken down into two specific *hypotheses:*

Specific hypothesis 1: The implementation of an educational program addressed to MA students from the specialty "Education, management and marketing" in managerial practice with reference to marketing research, determines the structuring of a coherent set of knowledge and skills of individual study, through active and creative involvement in learning.

Specific Hypothesis 2: The use of the interactive methodology for the development of critical thinking within an interdisciplinary program focused on the acquisition of specific marketing research skills, which will also contribute to the development of oral and written communication skills of the monitored Cycle II students.

Thus, the groups of master students, practitioners were tested the ability to apply the theoretical knowledge accumulated in the discipline "Marketing Research" in various practical, concrete activities of direct marketing research, according to a series of criteria, reflected in Table 1 and the realization of direct marketing research reflected in Table 2.

Table 1. Main marketing research activities in the field of sports entity promotion carried out by MA students during the managerial internship

Marketing research activities carried out by MA students	**Share of research application on sports entities**	**Marketing research activities in the field of product buying behavior**	**Share of research application on sports entities**
Studies on motivation	23	Preference towards sports program	51
Studies on advertising and its effectiveness	54	Satisfaction provided by product	39
Studies on public image	65	Purchasing behaviour	61
Studies on media	26	Purchasing intentions	47
Studies on the sale labor	34	Segmentation studies	37

The MA students conducted marketing research on their own, based on the requirements established by the manager of management practice, based on discussions with friends, employees of monitored entities and their customers. The MA students also mentioned that this would be the only way to truly understand the wishes of active sports participants or supporters / clients. Moreover, they believe that the success of communication depends on this understanding. Therefore, the method of observation, although it does not allow obtaining complex information as in the case of the survey, has the advantage of reproducing the natural, effective behavior of sports consumers, without training the bearer of information. Recourse to observation involves the direct involvement of the MA

student, in his possible capacity as marketer or manager - practitioner, respectively their attendance of playgrounds, gyms, grandstands, ticket sale points at sporting events, souvenir shops sports and all places from which information on consumers and products can be collected. Given the system's membership in the system and their predominantly athletic training, this helps them to obtain useful information, such as personal addresses and other data that cannot be obtained by observation, but by resorting to direct investigation [1, 5].

Table 2. Direct research conducted by MA students

Criteria	Types of research
The way to retrieve the information from its carrier	Observation and survey
The way to carry out in time	Permanent and occasional research
Place of carrying out the research	Researches carried out at the place of sporting events Researches carried out at the sports entity office Street research
Type of information to be obtained	Quantitative research Qualitative research

The master's student also resorted to market research, such as: launch a new sporting event or product; studies on the revision of the price structure on the stadium or in the sports arena; price revaluation studies for certain sports services; studies to re-evaluate the price differences between different products or between different seats in the stands.

Moreover, the most common interrogation techniques based on structured interview, used by practicing master's as a research tool was the questionnaire. The questionnaire was done together with the manager of the managerial practice, being decisive in achieving the purpose of the research and the established objectives. The master's student had to first establish the information needed and then include only the questions he or she needs answered, anticipating, as far as possible, the types of answers he or she expects to receive and how he or she will use them. The structure and content of the questionnaire followed a logical scheme, starting with general questions and continuing with the specific ones and vice versa. Each question was evaluated from the point of view of its understanding by the respondent, of the probability of obtaining an answer; simple, objective questions usually get clearer answers than questions grouped by topic.

The master's understood that the use of the questionnaire in the selective field surveys allows three types of possible applications in sports [2, 6, 7]:

✔ the selective field survey sends the questionnaire by mail or email. This method is less expensive and may be a better way to reach a larger sample of respondents;

✔ selective field survey conducted by telephone - which has the advantage of allowing the study of consumers by market segments, directing the questionnaire to specific types of respondents, either individuals or organizations;

✔ public audit - the most commonly used method of research in sports which consists in using a questionnaire to be distributed to participants or supporters at a sporting event.

The master's also resorted to exploratory interrogation techniques in sports, materialized mainly by conducting personal interviews, research that involved organizing expert groups (groups used in evaluating certain promotional campaigns, forecasting sales or assessing affiliation trends with certain clubs) and specialized groups (based on a sample of supporters, a select group of sports consumers or sports journalists) [7, 8].

Table 3 reflects a series of applications of marketing research conducted by MA students during the management internship with reference to the communication policy of sports organizations.

Below we present the results obtained by the MA students at the end of the internship on research groups. The comparison was made between the control group (who did not go through the optional educational program previously established by the internship in terms of the actual achievements regarding the marketing research) and the experiment group (who went through this program). The groups were homogeneous, consisting of 11-12 MA students each. The proposed investigation, achievable in intra, inter and trans-disciplinary conditions is located at the intersection between fundamental and applied, normative and operational research, philosophical and action research, prospective and retrospective research [4].

Table 3. Applications of marketing research conducted by MA students during the management internship with reference to the communication policy of sports organizations

Qualitative research on the consumer 2 groups Age: 22-47 years-old With affinities on certain sports Carried out during the practice	**Qualitative research on consumer** 4 groups 256 respondents Age: 23-54 years-old Who know certain important sporting events that took place at national or international level Carried out in a predetermined period
Interviews with members of the national team on a certain sporting event - National Sports Federations on sporting events identified - National Olympic and Sports Committee - Athletes - Coaches of the national team	**Interviews with sponsors** - Sponsors - Other Organizations than sports ones - Written media - Televisions involved in the media coverage of sports events - Opinion leaders

As a special type of scientific research, pedagogical research tends towards an explanation and a normative understanding of the education activity. It aims to define and argue the laws and principles that govern the design and implementation of education at the system and process level. This perspective, situated at the limit of philosophical research, highlights the need to research the aims of education that determine the value education directions, achievable in different historical and social contexts.

Pedagogical research requires, at the same time, the concentration of efforts on the descriptive analysis of the main factors and "actors" of education. As Gilbert De Landsheere observes, before knowing the laws of education, it is important to describe objectively the course of the training process and to analyze the procedures for its implementation. Another necessary direction at the level of pedagogical research aims at the study of the historical process of evolution of the thinking about education and of the specialized school institutions in its effective realization in concrete conditions that prove "the irreducible originality of the phenomenon".

Finally, the modern trends of pedagogical research highlight the importance of investigations aimed especially in the direction of university education, continuing education, and adult education. These investigations capitalize on the issue of education theory at the level of operational models applicable in the field of lifelong learning, possible and necessary in the context of intra, inter and trans-disciplinary approaches, open to the permanent (self) improvement of the subject and object of education.

In the postmodern perspective, the pedagogical research represents an activity of managerial management of the system and of the educational process designed and realized especially for the regulation-self-regulation of the educational action, respectively of the teaching act. It allows the notification of new pedagogical relations, relevant within the educational / teaching action, constituting the basis of the optimal solutions for solving the problems that appear at the system level and the educational process (Education Management).

Thus, we conducted an investigation of the development levels of written and oral communication skills, conducting an implicit assessment of learning outcomes, through the observation grid of Cycle II students, in managerial practice.

In this experiment we designed and implemented an optional educational program for students in the experimental sample. In this program we used an interactive methodology that we present below. Concerning the educational act from this perspective, we can understand marketing research, communication and communication in sports, as essential actions for the development of critical thinking. and an appropriate approach, suitable to current requirements. Promoting a different learning style, the methods focused on:

- stimulating curiosity and forming an original opinion;
- problem solving;

- argumentative debate of ideas;
- democratic acceptance of everyone's ideas;
- active involvement in the learning process;
- valuing teamwork, which leads to the development of each one.

In this context, the methods submitted to the masters' attention have the role of making them focus on the theoretical and practical values of knowledge and to make them aware of how they can help themselves in their own development.

The methodology of pedagogical research involved the use of a set of techniques, procedures and means, integrated at the level of the following categories of methods aimed at scientific investigation of educational reality:

- systematic observation;
- written survey (observation grid);
- analysis of results in managerial practice;
- study of bibliographic documents accessible at academic level.
- portfolio analysis.

The method of analyzing the portfolios, the products of the subjects' activity consisted in analysis, in terms of product, but also of process, from the perspective of certain parameters established in accordance with the purpose and objectives of the research, of the data provided by the component materials of the portfolio. We analyzed the portfolios made by students within the managerial practice, considering their information, documentation, collection and processing of information, the composition of the portfolio. We also analyzed the final product and its presentation by Cycle II students.

We started the experiment with the idea of verifying the hypotheses in carrying out each activity by inserting sequences aimed at marketing and communication research skills.

The control group continued its usual teaching activity, using the classic teaching-learning-assessment strategies, while the experiment group had an optional educational program to work in managerial practice, especially since they have benefited from the study of the "Marketing Research" discipline with a new curricular content focused on practical and less theoretical aspects. During the advancement within the learning unit, we provided the guidance and control of learning and we practiced various forms of periodic evaluation (tests, questionnaires) and final (portfolios, tests).

The grades we will discuss below reflect the students' practical knowledge after completing the optional educational program in managerial practice. The grades given refer to 1 - insufficient, 3 - sufficient, 5 - good, 7 - very good. Thus, for the items regarding the oral communication ability, 30% of the students from the control group obtain the insufficient grade, 24% the sufficient grade, 20% good and 26% obtain the very good grade. The students in the experiment group in a percentage of 7% obtained the grade of insufficient, 12% sufficient, 44% good, and 37% obtain the grade very well, as can be seen in Table 4.

Table 4. The grades obtained for students' oral communication skills in managerial practice using marketing research-specific terminology

Standard Minimum 1 Maximum 7	***Items***							
	Control group				***Experiment group***			
	Insufficient	***Sufficient***	***Good***	***Very good***	***Insufficient***	***Sufficient***	***Good***	***Very good***
	30%	***24%***	***20%***	***26%***	***7%***	***12%***	***44 %***	***37%***

In Table 5 are reflected the items regarding the written communication ability. Thus, 10% of the students in the control group obtain a good grade, 8% obtain a sufficient grade and 30% obtain a very good grade, as shown in Table 4.

Table 5. Qualifications obtained for students' oral communication skills in managerial practice using the terminology specific to marketing research

Standard Minimum 1 Maximum 7	***Items***							
	Control group				***Experiment group***			
	Insufficient	***Sufficient***	***Good***	***Very good***	***Insufficient***	***Sufficient***	***Good***	***Very good***
	35%	***27%***	***15%***	***23 %***	***18%***	***23%***	***29%***	***30%***

In Table 6 we present the comparative values of research skills in marketing specific to the experiment group, following their evaluation by the group of experts based on the individual activities of the MA students performed within the managerial practice and reflected in the practice documentation and the prepared portfolio.

Table 6. Comparative values of the marketing research skills of the experiment group evaluated within the managerial practice

No. crt.	***Tested values***	***Initial testing (without the optional program)***	***Final testing (with the optional program)***	***t***	***p***
		$\bar{x} \pm m$	$\bar{x} \pm m$		
1	The way of retrieving information	1.78 ± 0.17	2.34 ± 0.31	5.544	<0.001
2	Studies on advertising and its efficiency	1.69 ± 0.27	± 0.24	5.543	<0.001
3	Studies on the public image	1.84 ± 0.29	2.53 ± 0.21	5.746	<0.001
4	Studies on motivation	2.23 ± 0.24	3.12 ± 0.22	7.723	<0.001
5	Studies on sports consumers	1.81 ± 0.25	2.6 ± 0.20	5.392	<0.01

6	Studies on communication (interviews with members of the national team on a certain sporting event, interviews with sponsors, interviews with customers of sports entities)	1.80 ± 0.23	2.5 ± 0.19	5.384	<0.01

From Table 6 we can see that the way of retrieving and processing information at the initial test was less than 1.78 compared to 2.34 at the final test, t being 5,544 and P less than 0.001. Also, in the studies regarding the advertising and its importance for the sports entities, the MA students reached the values at the initial test of 1.69 compared to 2.38 at the final one, with t equal to 5.543 and P with a value lower than 0.001. Regarding the values recorded in the studies on sports consumers, the MA students recorded more significant values with P<0.01, t 5,392, and the items from the initial testing being 1.82 compared to those from the final testing of 2.6. We can also find significant values in studies on written and oral communication, where items 1.8 were recorded in the initial test, 2.5 in the final test, with a value of the student coefficient of 5.384 and a P<0.01.

Conclusions

Concluding, we can say that during the managerial practice the students get acquainted with the experience of those who work in the respective institutions, manage to master the pragmatic aspects of the future profession, the ways of applying theoretical knowledge to solve problems that constitute the content of activities. Students learn to operate with the means (tools, sports equipment, documents, registers, etc.) with the help of which the activity specific to the training field is actually carried out. Also, modern learning involves capitalizing on all aspects and dimensions of the human personality. More and more attention is being paid to multiple intelligences, critical thinking and educational alternatives, without which the learning process is complete and inefficient, in the hope that the student will be prepared to learn throughout life. Today's education must focus on participation and the development of cognitive functions, fostering "the development of thinking, the faculties of acquiring and using knowledge, the creation of knowledge at all ages [...] and the development of abilities to cope with new learning situations or of the life" [3, 4].

Bibliography

1. Budevici A., Armanov S. (2007). *Management şi marketing în sistemul educaţiei fizice şi sportului*. Chişinău: Valinex, p. 251.
2. Constantinescu M., Căescu St. (2006). The characteristics of sport services – element of differentiation in sport marketing. În: *Marketing şi dezvoltare: 1971 – 2006: 35 de ani de marketing în România*: Materialele Conferinţei Internaţionale. Bucureşti, ASE.
3. Cerghit I. (2006). *Metode de învăţământ*. Iași: Polirom.

4. Landsheere G. de. (1995). *Istoria universala a pedagogiei experimentale*. Bucuresti: Editura Didactică si Pedagogică, 1995.
5. Mitniţcaia L., Budevici-Puiu L. (2008). *Marketing general şi sportiv*. Curs universitar. Chişinău: Valinex SA. 220 p.
6. Oprişan V., Pop N.Al. (2001). *Politica de comunicare în marketingul sportiv*. Bucureşti: A.S.E.
7. Oprişan V. (2002). *Marketing şi comunicare în sport*. Bucureşti: Uranus, 2002. 431 p.
8. Prutianu Ş., Anastasiei B., Jijie T. (2001). *Cercetarea de marketing*. Iaşi: Editura Polirom.
9. Vermunt J.D., Minnaert A. (2003). Dissonance in student learning patterns: when to revise theory? In: *Studies in Higher Education*, no 28, p. 49-61.
10. Vermunt J.D. (2003). The power of learning environments and the quality of student learning. In: E. de Corte, L. Verschaffel, N. Entwistle & J. van Merriënboer (Eds), *Powerful learning environments: Unravelling basic components and dimensions Advances in Learning and Instruction Series*. Oxford: Pergamon, p. 109-124.

SPORT PERFORMANCE

THE FORMATION OF THE REPRESENTATIVE MINIHANDBALL TEAM BASED ON THE SOMATIC AND PSYCHOMOTOR MODEL

Moroșanu Angelica

Middle School no. 96, Bucharest, Romania

Abstract

The selection is the key component in the process of finding children who have sports skills. Starting from the axiom - sport is for everyone, but not everyone is for sport – the selection must be an objective, evolving and continuous process that interacts with the growth and somato-functional and motor development of the children. To optimize the selection process, it is very important to comply with and apply a set of requirements and criteria. Once this first stage of the selection was completed, highlighted in the literature by the phrase primary or initial selection, the instructive-educational process begins, the forerunner of the construction and formation of the school's representative minihandball team. In its first part, this process would be characterized in the first two years by a small volume of effort in training, and in the second part of the process, that being in the next two years, the dynamics will be emphasized and the main objective will be the development of different components of coordination skills.

Keywords: *sport, mini handball, selection, children, training.*

1. The purpose and the objectives of this research

The purpose and the fundamental objective of the theoretical approach is represented by the formation of the representative mini handball team based on the somatic and psychomotor model within the Gymnasium School no. 96 of Bucharest, where I am a teacher and the head of the department, because the work of creating a school team remains and must be a goal for every teacher of physical education and sports. First of all, the purpose of this initiative is the early detection of the innate possibilities of the students with the help of a complex system of requirements and criteria that I will describe in depth below, with the aim of finding the most equipped elements for the sport itself. Secondly, the idea of sports' education to all students in accordance with their skills, with the material basis, with the sports tradition of the school is also crucial. Because handball is a team sport with an accentuated dynamic character, it is also a synthesis of basic motor skills (running, jumping, throwing) and it is also part of the basic means of physical education and school sports. Practiced in an elaborate form, handball develops qualities of will (courage, combativeness, courage, initiative, perseverance) and moral qualities (respect for the opponent, for the referee, for teammates, discipline, etc.). Last but not least, by guiding young people to practice handball, this sport takes three different forms, namely: means of physical

education in education of all grades, high-performance and high-performance sports game, but also as a recreational sports game (table sports).

To sum it up, this didactic initiative means the acquisition by young athletes of sports and sports of strong character traits, they would become more disciplined, more eager to overcome the problems, more responsible by adopting a balanced lifestyle, through constant participation. In this way, by respecting all of the requirements and tasks of the trainings, being aware of the responsibilities towards the success of the team, the aim of this theoretical approach is to be a source of information, development that will come in support of teachers and students, material that can to be processed and adapted to the existing conditions in every school in our country.

The objectives of the research:

a. Carrying out the selection process among the students of the school using objective and well-defined evaluation criteria; this selection process must be of a continuous, systematic, active nature, aiming at a wide range of aspects of the personality of those who begin to practice handball in an organized way, so that they can select the most gifted students;

b. Researching the particularities of each subject, which are included in the selection process to monitor stable genetic traits such as stature, speed, general dexterity, relaxation, then perfecting genetic traits such as body weight, strength, endurance, taking into account that the age of 8-9 years is the optimal age to positively influence these particularities; on this point, I would like to make a few remarks on the controversy surrounding the age of the beginning of handball; In his paper ***„Teoria şi metodica handbalului",*** I. K. Ghermănescu mentions that the age of first contact with handball, for children, is 10 years, and reaching the level of high performance requires a long training period, which lasts about 11-12 years; However, in today's society, one is willing to function more and more on a scientific basis, and has noticed that it is not profitable for the individual or for the community to make material and moral investments so that after a few years everything will be in vain, unprofitable; Thus arose the need to establish an organized scientific system that would allow, based on objective criteria, medical-biological and the respective prognosis to select from the large masses of children and young people, the most gifted, who after proper training to achieve the biological model of tomorrow's athlete; Based on these elements, there are many arguments which support the idea that the age of 10 is relatively late for the first contact with handball, therefore, I would also like to join the group of specialists who consider the age of 8-9 as the ideal age for the first contact with the handball.

c. designing the training plan containing training methods to contribute to the development of coordination skills, the ultimate goal being to improve the general motor skills of students selected for mini handball.

d. The experimental argumentation of the efficiency of training programs structured on the training model specific to the game of mini handball would raise

the level of sports performance in the representative school minihandball team, for the age of 8-9.

2. A brief presentation of the actual state of the scientific research

The selection is a key component in the process of finding children who have sports skills. Starting from the axiom - sport is for everyone but not everyone is for sport – the selection must be an objective, evolving and continuous process that interacts with the growth and somato-functional and motor development of children. Also, the selection must have a scientific basis that allows the identification of genetic factors that, by combining with environmental factors, can highlight the medical-biological features specific to performance sports. I consider these mechanisms very important because they help me in evaluating children during the selection process. The practice, which is the place where the theory and efficiency of research methods are verified, has shown many times that no matter how well we work with an athlete, if they have no genetic inheritance, we will not be able to make him a champion, but we can get the most out of it through the genetic framework. At the same time, based on a long time experience with outstanding results at the level of children and juniors, I appreciate that the establishment of any decision on the selection and inclusion in the program of initiation of students should be made after a period of 1-3 months. Such an approach is found in many sports, considering that this period of supervision is recommended to accommodate with the specifics of the activities to be practiced in that sport. Moreover, there were many cases in which at the time of the selection, children with coordination skills, special motor skills, who could not express themselves at an appropriate level due to a state of discomfort were rejected, and after the moment of selection certain deficiencies regarding the basic motor skills would disappear, the new challenges, the competitive environment helping children to evolve quickly, or an insufficient motor experience due to the social environment from which it comes, but with a very good recovery index, to place these subjects in a different light than the original one. So here are just a few of the elements that support this hypothesis regarding the risk of hasty decisions at the time of the selection.

Bibliography

1. Berbecaru, R. A., Hodorcă, R. M., Bulza, C., Sturzu, B., & Marcu, V. (2015). Research regarding the place and role of selection in handball. DISCOBOLUL, 34.
2. Curitianu, I. M. (2020). The Impact of Movement Games in the Process of Teaching Minihandball at Primary Level. Bulletin of the Transilvania University of Braşov. Series IX: Sciences of Human Kinetics, 113-118.
3. Kalina, R. M., & Barczyński, B. J. (2010). EKO-AGRO-FITNESS© original author continuous program of health-oriented and ecological education in the

family, among friends or individually implemented–the premises and assumptions. Arch Budo, 6(4), 179-184.

4. Muntianu, V. A., Abalașei, B. A., Nichifor, F., & Dumitru, I. M. (2022). The Correlation between Psychological Characteristics and Psychomotor Abilities of Junior Handball Players. Children, 9(6), 767.
5. Teodora-Mihaela, I., Veronica, M., & Laurentiu-Gabriel, T. (2016). An investigation into the neuromuscular control at the level of the upper limbs of junior handball girls players. In SHS Web of Conferences (Vol. 26, p. 01039). EDP Sciences.

CRITERIA FOR SELECTION AND TRAINING IN THE FOOTBALL GAME OF THE CHILDREN SE 6-8 YEAR

Munteanu Cornel Marian

Middle School No.96 of Bucharest, Romania

Abstract

The scientific training in football of children aged 6-8 years must take into account the pace of somatic growth and psycho-motor development, permanently confronting the quality inventory of each age with the requirements of peformance football.
The ontogenetic evolution shows that each age is involved either at the incipient manifestation of some qualities or at their maturation. It is indicated that when the child has passed certain stages of accumulations and it turns out that he has (background) qualities that can be perfected, it is recommended an indirect and discreet information on the normal and pathological personal and family history.
The extension of the training process, by lowering the age of selection and of the competent, scientific training, as well as the entire teaching process with children and juniors, is part of the modern concept of training in football. In this context, the quantity but especially the quality of the training process of the children and juniors - which constitutes the mass base of the performance football - represents a decisive factor of ensuring, in perspective, the superior performance capacity of the players at the level of the current game and according to its spectacular evolution, namely: total commitment and blurring of the strict specialization in positions.
The aim is to identify specific methods and means for achieving a 6-8-year-old players for the formation and preparation of a football team.

Keywords: *training, football, peformance, children, juniors*

1. Introduction

Football, which is the most widespread in most countries in the world, has gone.

Football has now become a social phenomenon rather than a sports one, with many different cultural, scientific, educational and even political implications. It is recognized as a game of great appeal and popularity on all meridians of the globe.

Science proves that every field of reality is in continuous development. Football as a social phenomenon, obeying the same general laws of development, has followed and continues to follow an upward line.

Thus, the aim of the research consists in identifying specific methods and means in order to achieve an efficiency of the selection and training process of players aged 6-8 years, for the composition and preparation of a football team.

In line with this task of great importance for the performance base of football, we consider it appropriate to experience a new method of training in this age group, a method based on the study of the model of the football player at the level of the age of 6-8 years.

2. **Material and method**

In order to make a contribution to the improvement of the development of the motor capacity in the process of selection and preparation of the school selection from the primary cycle 6-8 years, we have elaborated the following training models, models of the players and game models for the age category of 6-8 years and we proposed the application in training of games with a small number of players, in order to achieve the objective of the study.

In the framework of solving the research objectives, several research methods were used: the experiment; statistical-mathematical methods; the graphic and tabular method.

Samples and technical control rules at the age of 6-8 years

-test speed 10 m

-ball management 15 m

-keeping the ball a distance of 8 m

3. **Results and Discussions**

1. *Table with the initial and final arithmetic averages of the experiment*

1.	2. Test speed 10 m 3. Sec	4. Ball management 15 m 5. sec	6. Keeping the ball a distance of 8 m 7. sec
8. Initial arithmetic mean	9. 3,366	10. 4,028	11. 24,016
12. Final arithmetic mean	13. 3,288	14. 3,900	15. 23,808

Studying the statistical data presented in the table above regarding the initial values and the final values of the technical tests in which the team of children aged 6-8 years was tested, as well as their average levels, we can specify that due to the use of movement games and games with a small number of players, there have been obtained increases in the values of the motor qualities, which represents an improvement of the training model of the 6-8 year old player:

- in the 10 m speed test, the final average level decreased compared to the initial average level by 0.0717;
- in the ball driving test over the distance of 15 m, the final average level decreased compared to the initial average level by 0.128
-in the test of maintaining the ball on the distance of 8 m, the final average level decreased compared to the initial average level by 0.208

4. **Conclusion**

The use of games with a small number of players, with themes well adapted to the particularities of the children, contributed to learning the basic mechanisms of the main technical procedures, making their transfer to the game.

Combining analytical training with exercises in the form of a game was an effective method of teaching at 6-8 years old.

I propose that in the training plans to increase the number of hours for acquiring the basic technique by using games with a small number of players that adapt to the particularities of the children

Bibliography

1. Drăgan A. –„Fotbal pentru juniori", Ed. Valinex, Chişinău, 2006.
2. Drăgan A. –„Fotbal – concepţii, metode şi mijloace", Ed. Mongabit, Galaţi, 2006.
3. Drăgan A., Oprea A. –„Abordări interdisciplinare în fotbal", Ed. Academică, Galaţi, 2007
4. Manolache G. – „Lucrări practice", Ed. Mongabit, Galaţi, 2005.

SOCIOLOGICAL STUDY ON THE IMPORTANCE AND ROLE OF PHYSICAL TRAINING IN CADET VOLLEYBALL TRAINING (14-16 YEARS)

Constantin Lavinia

PhD student at the University of Pitesti

Abstract
As a result of the new methodological guidelines, as a consequence of the scientific results, as well as the advanced practice of some coaches, in the programming and planning of training, methodological principles of modern teaching technology have been established, namely objectification and modernization of training content.
The basic component of the entire instructive-educational process, without which the other elements of it cannot be conceived and conditions the obtaining of sports results, as well as the training of players, is the physical training.
Analyzing these aspects, it is obvious that the general and specific physical training has a decisive role in the modern game of volleyball, but which is not always given adequate attention in the training from the age of junior.
Given these premises, we consider it necessary that in the dynamics of volleyball training of juniors, new methodologies must be found regarding the formation of competitive models of players, starting with the model of their physical training.
It can be appreciated that the preparation of the poor motor qualities of a sportswoman is not enough, and hence some consequences that lead to the formation of unilateral sportswomen, without efficiency when it is necessary to approach a flexible, varied strategy and tactics. Thus, in the game situations in which they are contracted on strong points and annihilated; the athletes do not have enough physical resources to change the register of demands.

Keywords: *sports training, physical training, volleyball, cadets, questionnaire*

Introduction

The aim is to establish the weight of the importance of aspects of physical training in the training process of cadet volleyball players (14-16 years).

Research subjects:

A number of 10 specialists from all over the country, who deal with the training in performance volleyball, were kind enough to answer this questionnaire.

Research organization:

The paper tends to contribute to the role of physical training in performance volleyball in cadets (14-16 years).

For an overview of how to approach the physical training of volleyball players in training, we considered it necessary in our research, in addition to a bibliography with a rich content, to develop a questionnaire.

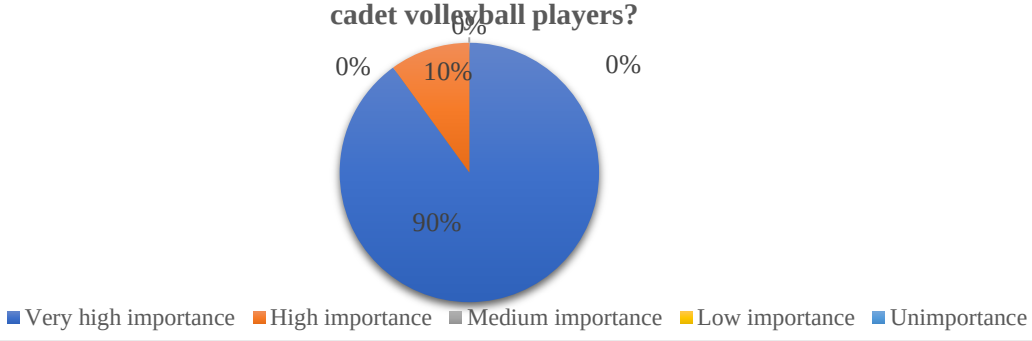
The first question in the questionnaire is *"How important is physical training in the training of cadet volleyball players?"*. The analysis, from the answers of the

coaches, shows that 90% of those surveyed consider physical training to be of great importance in the training of cadet volleyball players.

Table 1. *Centralization of the results to question no. 1 of the questionnaire*

Answer	No answers	percentages
Very high important	9	90%
High importance	1	10%
Medium importance	-	-
Low importance	-	-
Unimportance	-	-

Figure no. 1 How important is physical training in the training of cadet volleyball players?

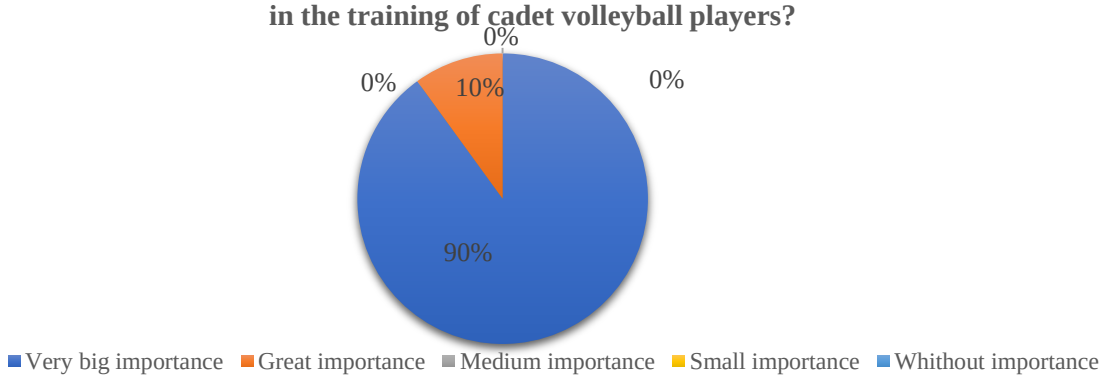


The content of question number 2 is *"What importance do you attach to specific physical training in the training of cadet volleyball players (14-16 years old)?"*, and the respondents opted for the following answer options: (very high importance, high importance, medium importance, low importance, unimportance), from which only one will be ticked. Following the analysis of the answers given by the interviewed coaches, we can say that 90% answered that "very importance", 10% answered "great importance".

Table 2. *Centralization of the results to question no. 2 of the questionnaire*

Answer	No answers	percentages
Very important	9	90%
Great importance	1	10%
Medium importance	-	-
Small importance	-	-
Without importance	-	-

Figure no. 2 What importance do you place on specific physical training in the training of cadet volleyball players?



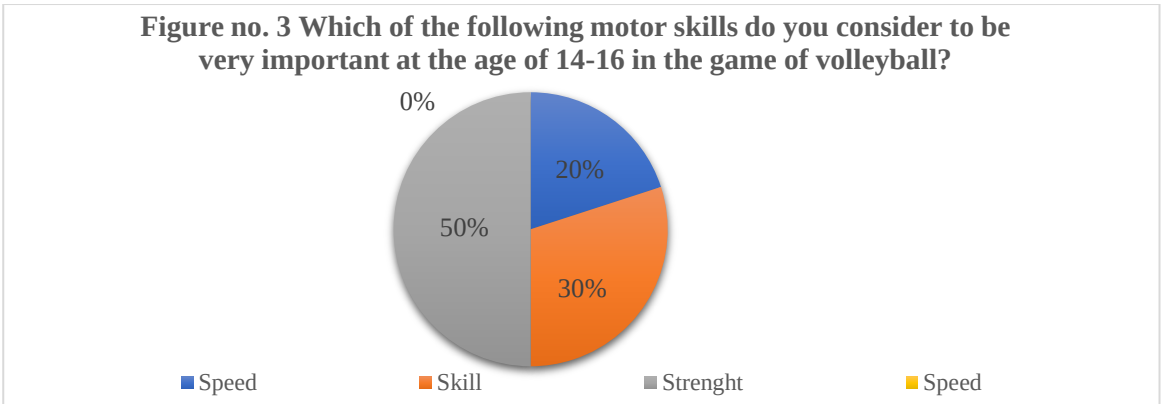
The content of question number 3 is *"Which of the following motor skills do you consider to be very important at the age of 14-16 in the game of volleyball?"*, And the respondent has four variants of the respective answer: speed, strength, endurance, dexterity.

To this question 20% of those surveyed answered speed, 50% considered strength as the most important motor quality in the game of football, 30% skill.

Table 3. *Centralization of the results to question no. 3 of the questionnaire*

Answer	No answers	percentages
Speed	2	20%
Skill	3	30%
Force	5	50%
Speed	-	-

Figure no. 3 Which of the following motor skills do you consider to be very important at the age of 14-16 in the game of volleyball?



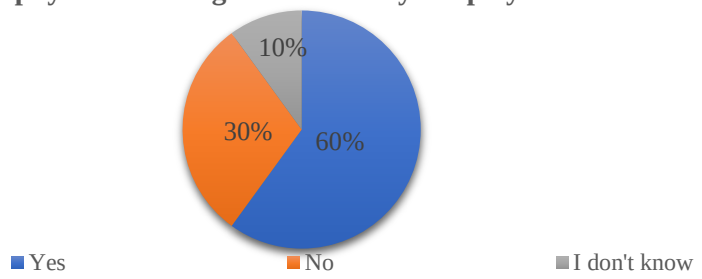
Question 4 is *" Do you consider plyometrics a basic component in the physical training of cadet volleyball players?"* , and the respondent has three options: yes, no, I don't know.

To this question, 6 % of those surveyed answered "yes", 30% said "no" and only 10% said "I don't know".

Table 4. *Centralization of the results to question no. 3 of the questionnaire*

Answer	No answers	percentages
Yes	6	60%
Not	3	30%
I don't know	1	10%

Figure no. 4 Do you consider plyometrics a basic component in the physical training of cadet volleyball players ?

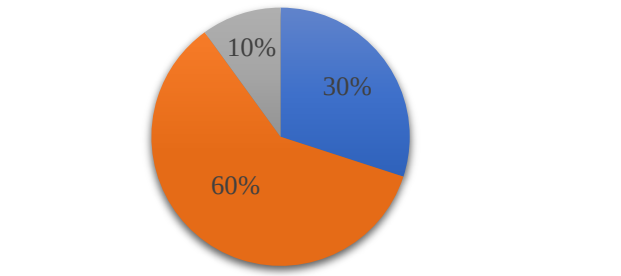


To question number 5 of the questionnaire *"Is the effect of plyometric exercises immediate?"* , the coaches had to choose between three answers, namely: yes, no and I don't know. Thus, the answers of the coaches were 3 ie 30% that "yes", 6 ie 60% that "no" and 2 respectively 20% of those surveyed that "I don't know".

Table 5. *Centralization of the results to question no. 3 of the questionnaire*

Answer	No answers	percentages
Yes	3	30%
Not	6	60%
I don't know	1	10%

Figure no. 5 Is the effect of plyometric exercises immediate ?



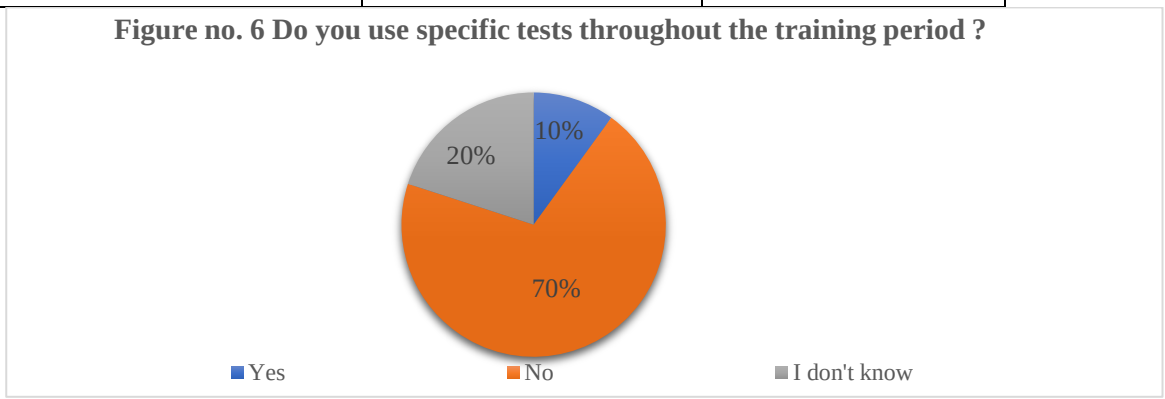
To the last question of the questionnaire, namely *"Do you use specific tests during the whole preparation period?"* , the coaches had a choice of three answers, namely: yes, I don't know.

Following the analysis of the answers given by them, we can says that 10% of those surveyed said "yes", 70% said "no" and 20% said "I don't know".

Table 6. *Centralization of the results to question no. 3 of the questionnaire*

Answer	No answers	percentages
Yes	1	10%
Not	7	70%
I don't know	2	20%

Figure no. 6 Do you use specific tests throughout the training period ?



Conclusions:

Considering the results of the questionnaire-type survey and taking into account the considerations from the specialized literature abroad and in our country, regarding the obtaining of sports performances in the game of volleyball at the age of 14-16, we can conclude an order of motor qualities according to of their importance, as follows: strength, skill, speed, endurance.

Most of the coaches surveyed also consider that it is not possible to talk about performance sports without a general and specific physical training carried out through a planning according to the training stages and with rationalized and standardized means according to the level of training.

Most of the specialists surveyed use known and generally applied methods in their training, not being familiar with modern training methods that would produce beneficial results for performance sports.

Also, most coaches consider it very important to establish objective tests to determine the level of general and specific physical training for cadet volleyball players (14-16 years).

Bibliography:

1. Bompa, T., O., (2001) - *Development of biomotor qualities*, Ex PONTO Publishing House, CNFPA, Bucharest.
2. Bompa, T., (2002) - *Theory and methodology of training*, EX Publishing House. Ponto CNFPA, Bucharest.
3. Niculescu M., Niculescu, I., Rada, L., (2014) - *Fundamentals of the game of volleyball*, University Publishing House, Craiova.
4. Păcuraru, Al., (2000) - *Theory of sports training*, "Dunărea de jos" University Publishing House Foundation, Galaţi.
5. Pradet, M., (2012) - *Physical preparation*, Editura INSEP digital collection - Publications

THE ROLE OF PLIOMETRIC MEANS IN THE PHYSICAL TRAINING OF THE MAIN SHOOTER IN THE VOLLEYBALL GAME AT THE AGE OF 14 - 16 YEARS

Constantin Lavinia

PhD student at the University of Pitesti

Abstract:

Current volleyball requires that the training be completed, so that the players can withstand the great efforts of the modern game in optimal conditions and without repercussions.
In the modern methodology of training in the field of sports games, as well as in volleyball, there have been important changes in the design of the content, in the structure and organization of the training of players and teams.
Being known the importance of physical training in the technical-tactical evolution of volleyball players in official competitions, we considered necessary and useful the scientific approach to the research issue.
We can say that it is an area that has not been sufficiently explored, thus requesting investigations into the results it can have if we apply training programs to the center players.
The increase of the execution speed and implicitly of the reaction one, which imposes the faster training in effort of the required segments and of the whole body, as well as the increase of the explosive force, constitute the priority directions in the preparation. The complexity and variety of the technical-tactical actions also increased, which led to the shortening of the breaks between the game phases, to the increase of the intensity of the effort and to the reduction of the recovery time.

Keywords: *plyometrics, main shooter, volleyball, physical training*

1. Introduction

Modeling the training of the center player for cadets must be done through specific programs, using individualized training, in order to obtain sports performance.

The aim of the research is to optimize the physical training in the training of the main shooter, adapted to the game tasks, by elaborating, capitalizing and confirming the plyometric programs, having the possibility to achieve an optimal and rationalized training, in order to meet the proposed performance objectives.

Research hypothesis: by adapting the physical training, by plyometric means, to the game position and to the morpho-functional particularities of the main shooter, we consider that we determine the increase of its performance capacity.

Research methods: analysis and generalization of data from the literature, measurement and testing method, pedagogical experiment, statistical-mathematical method.

Control tests applied:

- Throwing the medicine ball (2 kg)
- Abdomen
- Press bending (1RM).
- Push from chest to bed (1WD)

Organizing and conducting the experiment

The pedagogical experiment I carried out between September 2021 - February 2022, consisted in applying programs with plyometric means, on an experimental group (LPS Piteşti) and I compared the results with a control group (ACS Extrem Piteşti), which and - carried out the activity according to its own annual training plan, with means elaborated by the coach.

Thus, at this age (14-16 years), one of the main objectives of the training program is the development of a solid anatomical and physiological basis.

The combination of strength and speed is decisive in contemporary volleyball, and its preparation close to maximum strength, benefits the development of strength with transfers in the speed zone, as required by the game of volleyball. This imposed the need to request in the most specific way the muscle groups involved in volleyball, putting into practice the plyometric means and strength indices useful and necessary for this activity.

Physical training was planned in conjunction with technical-tactical exercises. During the competition, the purpose of the training was to maintain the level of physical training at the levels reached after the training period, in order to facilitate the performance in competitions. Regarding the transition period, we have made a training that will contribute to the balanced development of the muscles.

We aimed to apply exercises to ensure the development of the muscles of the upper limbs (improving the strength and strength of the arms for attack and service), the lower limbs (increasing strength and explosiveness), the back and abdomen.

Data analysis and interpretation:

The first test was ***"throwing the medicine ball"*** , *where the main players* of the experimental group made a progress of 0.70 m, and those of the control group a progress of 0.20 m. The value of "t" in Fischer's table is 7.526 ($p < 0.005$) for the experiment group and 0.651 (insignificant) for the control group.

Graphic representation in table no. 1. is eloquent about the results obtained by the two groups during the experiment.

Another test applied in our experiment was the ***"abdomen on 30"*** . The *main* players achieved an increase of 5.37 repetitions for the experimental group and 2.3 repetitions for the control group. The value of the Student's test is 5.410 (significant $p < 0.01$) for the experimental group and 0.655 (insignificant) for the components of the control group.

Table no. 1 The results at the initial - final test and the dynamics of the evolution of the strength indicator, at the test "throwing the medicine ball 2 kg" - the experimental and control groups

Sample tested	Test group		Post / no. played
			Main player n = 3
Throwing medicine ball(2 kg) (m)	Experiment group	IT	4.83
		TF	5.53
		Diff. med	**0.70**
	Witness group	IT	4.4
		TF	4.6
		Diff. med	**0.2**

Table no. 2. The results at the initial test - final and the dynamics of the evolution of the strength indicator, at the test "abdomen 30 "" - the experimental and control groups

Sample tested	Test group		Post / no. played
			Main player n = 3
Abdomen 30 "(no. Of repetitions)	Experiment group	IT	25.66
		TF	31
		Diff. med	**5.34**
	Witness group	IT	25.66
		TF	25.6
		Diff. med	**5.34**

Test **" *pushed from the chest to the bed"*** by which we tested the maximum strength of the arms, shows us the players specialized in the *main position* that they obtained an increase of 13.66 kg for the experimental group and 3.34 kg for the control group. The value of the Student's test is 10.25 ($p < 0.001$) for the experimental group and 1,211 (insignificant) for the control group.

Another test applied to test the maximum strength (1 RM), this time of the lower limbs, was that of ***kneeling in the press***.

main players in the experimental group recorded an average of 131.66 kg at the initial test and 155 kg at the final test; in the control group the value of the arithmetic mean at the initial test was 133 kg and at the final one 142.33 kg. The value of the Student's test calculated between the averages obtained at the initial and the final test, indicates for the experimental group the value of 7.006 (significant $p < 0.005$), and for the control group 4.008 (significant $p < 0.05$).

Table no. 3. The results at the initial test - final and the dynamics of the evolution of the strength indicator, at the test "pushed from the chest by lying down" - the experimental and control groups

Sample tested	Test group		Post / no. played
			Main player n = 3
Pushing from chest to bed (kg)	Experiment group	IT	42
		TF	55.66
		Diff. med	**13.66**
	Witness group	IT	40.66
		TF	44
		Diff. med	**3.34**

Table no. 4. The results at the initial test - final and the dynamics of the evolution of the strength indicator, at the test "press bending" - the experimental and control groups

Sample tested	Test group		Post / no. played
			Main player n = 3
Press bending (kg)	Experiment group	IT	131.66
		TF	155
		Diff. med	**23.34**
	Witness group	IT	133
		TF	142.33
		Diff. med	**9.33**

Conclusions:

The means aimed at physical training through plyometric exercises, have been adapted to the objectives and requirements of each training period.

The use of plyometric means during the training led to the achievement of a superior physical training of the cadet volleyball players (14-16 years old), by improving the strength indices.

The plyometric means programs included exercises with the exact determination of the number of repetitions and sets, depending on the player's ability to withstand the effort, and the duration of the breaks.

Bibliography:

1. Bâc , O., (1999) - Volleyball, University of Oradea Publishing House.
2. Bompa, T., (2001) - Development of biomotor qualities, EX Publishing House. Ponto CNFPA, Bucharest.

3. Bompa, T., (2002) - Theory and methodology of training. Editura EX. Ponto CNFPA, Bucharest.
4. Cometti, G., (1990) - Les methodses modernes de musculation, tome 2 - donnees practiques, UFR STAPS, Universite de Bourbogne, Dijon.
5. Dragnea, A., Teodorescu, S., (2002) - Theory of sport, FEST Publishing House, Bucharest.
6. Epuran, M., (1992) - Methodology of research of corporal activities, vol. I and II, ANEFS Publishing House, Bucharest.
7. Niculescu I., (2006) - Psychomotor skills in the game of volleyball, University Publishing House, Craiova.
8. Niculescu, M., Vladu, L., (2005) - Volleyball from A to Z, University of Pitesti Publishing House.
9. Niculescu, M., Mateescu, A., Trăilă, H., Creţu, M., (2006) - Methodological and applied bases of muscular training. University Publishing House, Craiova.
10. Păcuraru, Al., Balaiş, F., Iacob, I., Braharu, O., (2000) - Volleyball teacher's manual, Helios Publishing House, Iaşi.
11. Simion, Gh., Simion I. , (2006) - The art of training muscle strength, University of Pitesti Publishing House.

STUDY ON OPTIMIZING THE DANCESPORT BASIC TRAINING IN CHILDREN AGED 6 - 9 YEARS

Grigore Maria Florica[1], Jurat Valeriu[2], Moga Carolina[3], Sergey Eshtayev[4], Potop Vladimir[5]

[1] *Ecological University of Bucharest, Romania*
[2,3] *State University of Physical Education and Sports, Chisinau, Moldova*
[4] *Uzbek State University of Physical Education and Sport, Uzbekistan*
[5] *Department of Physical Education and Sport, University of Pitești, Romania*

Abstract

The purpose of the study is to verify the effectiveness of a training program that achieves the optimal transition from the initiation stage in dancesport to the initial specialization stage for the 6-9-year-old children. The study was conducted over a period of 4 months, respectively from September to December 2019, with a group of 22 children, 11 girls and 11 boys, who practiced the dancesport in the "Pas în doi" Sports Club of Bucharest, with the aim of participating in the first "Hobby" class competitions. Three fitness-evaluation tests were given: assessment of posture and artistic execution, coordination and motor memory (test 1), technically correct execution of the cha-cha steps, proper posture of torso and arms, rhythmicity and motor musicality - marks regarding the rhythm, tempo and body expressiveness (test 2); spatiotemporal orientation, balance and speed of execution (test 3). Several directions were developed regarding the approach of the training in a complex way, at the level of the initiation groups, emphasizing the favorable manner to pass from the initiation stage to the initial specialization stage aiming at the participation in the first Hobby competitions. The study contributed to the optimization of sports training along this very important period, in which the basic means of other disciplines are still preserved, but the specific body technique and the artistic expression of music and sport dances are also addressed. Rigorous systematization of the training, in the sense of a correct planning of the work sequences and methodical steps, as well as the use of a high number of means, influenced optimally the transition to the initial specialization stage.

Key words: *training, technical preparation, assessment, means, kid dancers*

1. Introduction

Dancing is a complex physical exercise. It develops, besides the basic motor skills and qualities (Cosma, Ungureanu, & Safta, 2014), the rhythmicity, musicality, orientation in space, imagination, posture and artistic performance (Moraru, 2017; Grigore, & Grimaschi, 2015; Zabrocka, Dancewicz, & Supinska, 2015) as well as some mental and social qualities of behavior and communication (Nastase, 2012).

Dancesport is particularly important for the education of the children aged 6-9, as it considerably improves the segmental coordination, balance and orientation in space (Ababei & Hagimă, 2017).

As competitive sport, dancing has two disciplines: Standard and Latin

(Guarino, 2015). The music used in dancesport must be clear, pleasant and attractive, with accessible rhythm and tempo (Robson, 2004). In competitions, the music chosen for each type of dance belonging to one or the other discipline must necessarily respect the proper tempo corresponding to the respective dance (Moelants, 2003).

The technical training is constituted by the assembly of means, measures and techniques used to consolidate and improve the technical skills specific to the dances of the two sections (Franklin, 2013; Osadtsiv et al., 2015; Zahiu, Manos & Drăghici, 2020).

Although artistic training has an important role, the dancesport specific training does not use enough exercises in this sense. That is why it is necessary to complete the dancers' training with appropriate means (Visan, 2002). Artistic training requires the use of choreographic, musical, expression means, thus stimulating the creativity and motor expressiveness (Robinson, 1982; Hugel, et al., 1999; Visan, 2005; Chirazi, 2021).

Musical preparation specific to the groups of beginners is part of the general training objectives at this age. Therefore, one aims at creating the general bases of rhythmicity and motor musicality (Macovei, Zahiu & Şulea, 2014).

The purpose of the study is to check the efficiency of a training program that ensures the optimal transition from the initiation stage to the initial specialization stage in 6-9-year-old children.

2. Material and method

The research was carried out over a period of 4 months, namely from September to December 2019, with a group of 22 children, 11 girls and 11 boys, who practiced dancesport in the "Pas in doi" Sports Club of Bucharest.

The initial selection of these children was made at the age of 5-6 years. They have been training for almost 2 years and they are currently of 7 - 8 years old. It can be said that these children are at the end of the initiation stage in sports activity and are taking the first steps in the next stage of initial sports specialization (2 years). This stage aims to the participation in the first „Hobby" competitions with 4 dances (technical program): Slow waltz and Quickstep - Standard section; Cha-cha and Jive - Latin-American section. This training stage described in the paper represents the transition towards the initial sports specialization.

In the case of the preparatory exercises, the initiation in the basic technique of a dance and the acquisition of its basic content were achieved individually. Then the dance positions and posture were learned in couples; the assimilated basic content was repeated in various combinations and small choreographies adapted to this dance level.

Control-evaluation tests:

Test no. 1. *Evaluation criteria*: posture and artistic performance; coordination and motor memory.

Structure of 16 counts – modern dance, including dance steps, movements of the arms and torso, with different directions, plane, duration, amplitude; the movements must be performed respecting the aesthetic particularities. The demonstration was carried out twice, with musical accompaniment in 2/4-time, moderate tempo; afterwards, the subjects performed the established structure. If the subjects achieved a correct performance from the first attempt, they received the grade 10; from the second attempt - grade 8; from the third attempt – grade 6; from the fourth (or several) attempt - grade 4 (the grades were converted into points).

Test no. 2. *Evaluation criteria*: technically correct performance of cha-cha steps; correct posture of torso and arms; rhythmicity and motor musicality – benchmarks regarding rhythm and tempo; body expressiveness. A structure with specific basic steps and figures of the cha-cha Latin dance, with 32 counts, 4/4-time signature was taught. This structure was learned by the athletes and then danced individually. Scores ranging from 4 to 10 were given, according to the following scoring: 1 point for motor musicality; 1-2 points for correct technical performance; 1-2 points for good posture of torso and arms; 1 point for body expressiveness. The score obtained and converted into grades was added to the minimum grade of 4.

Test no. 3. *Evaluation criteria*: spatial-temporal orientation; balance; execution speed. A structure was created, including the following elements: turning around on the spot with sharp steps and bent knees; tucked forward rollover; 4 basic dance steps of Jive chasse; ending in balanced position on one foot (passe) maintained for 1 second. The chosen elements are different in aspect and dynamism. The subjects must cover the established route as quickly as possible while correctly performing the required movements and keeping within the limits of a 1-meter-wide corridor. Each dancer covered the route twice. The best time was taken into consideration (sec).

3. Results and Discussions

Table 1 *Summary of the values of the calculated statistical indicators*

Statistical indicators	**Test 1 (grades)**		**Test 2 (grades)**		**Test 3 (sec)**	
	initial	**final**	**initial**	**final**	**initial**	**final**
x	5.36	8.18	5.72	8.68	12.18	10.63
S	1.3	1.2	0.9	1.03	1.49	1.48
Cv (%)	24.35	14.58	15.87	12.01	12.30	14.00
t	13.63		29.00		11.00	

These tests showed rather weak results of the research group. The results can be explained by the still reduced ability of the subjects to memorize and reproduce certain movements according to the technical-artistic requirements. At the final check, the recorded and statistically processed data highlight a better

evolution and progress of the experimental group. The arithmetic mean is 5.36 points and 5.72 points in the tests no. 1 and no. 2, where the evaluation was made in points-grades; in the case of the test no. 3, where the time needed to cover the route was measured, the mean was 12.18 sec.

In ***Test no. 1*** – one can notice the insufficient preparation of the subjects regarding the *posture and artistic performance, coordination, motor memory*. Few subjects managed to reproduce the proposed structure from the second attempt; many children succeeded to reproduce it correctly only from the third attempt and some children did not manage even after 4 attempts, consequently obtaining a grade of 4. At the final testing, one can observe the clear progress of the group, with scores of 8 and 10 points proving that the modern dance structure was successfully done from the first or second attempt. This fact is also confirmed by the values of the statistical indicators. Thus, the value of the arithmetic mean is 8.18 points.

In ***Test no. 2*** – poor scores, converted into grades from 4 to 7, can be observed. The subjects are not familiar with the technique of cha-cha steps, they do not have a correct and adequate posture, they do not have bodily expression skills. There are also problems of musicality because of the lack of musical accompaniment of this kind during the training. It is understandable taking into account the fact that they have not approached the technical content of dancesport until now. There are also much better results in the final testing. The subjects went through a training program in which they learned the correct technique of the selected dance steps, performed to appropriate musical accompaniment that enabled them to learn how to count the music and fit the movements in the appropriate durations. The posture of arms and torso was improved, the character of the dance was clearer, which led to the improvement of the expressiveness. The arithmetic mean increased up to 8.68 points; scores between 7-10 points were obtained.

In ***Test no. 3*** – the time achieved by the subjects is quite high (12.14 sec), due to the lack of knowledge of jive steps, the poor *spatial-temporal orientation*, the difficulty in *maintaining a static position of balance* and in quickly performing some rotation elements from standing up position or at ground level. In the case of the final testing, better results were obtained in the sense that *the time allocated to the given structure decreased*. The group performed different exercises of rotation and balance specific to dance, combinations of steps that improved the *spatial-temporal orientation*, exercises that helped to learn the jive steps. All these had a good influence on the perception of dynamism in different movements and on the *increase of the performance speed*. The *arithmetic mean* dropped to 10.63 sec, as it was to be desired.

The carried-out analysis highlights the better results of the final check. This fact is confirmed by calculating the significance of the differences between the means. It was considered that the *differences were significant,* so it is possible to state, with a

probability of over 99.9%, that the posture, artistic performance, coordination and motor memory (test no. 1); technical performance, posture, musicality and expressiveness (test no. 2); spatial-temporal orientation, balance, performance speed (test no. 3) were improved at $p < 0.001$.

In order to concretize the notions specific to the training in dancesport, every two weeks a training session should be dedicated exclusively to the development of other motor skills, without ignoring the dancesport particular motor skills (Grigore et al., 2010). It is possible to improve the performance of the young dancers by diversifying the training programs (Uspuriene, Malinauskas & Sniras, 2019). The lack of control on the technical training components among young dancers decreases the effectiveness of the training process at the level of the pre-basic training (Osadtsiv et al., 2015). A study on the level of physical and technical training in 6-10-year-old children highlights the technical aspects (technical performance, musicality, artistic impression) and the fact that the average values in both boys and girls can be improved (Năstase, 2002a; Năstase, 2002b; Nanu, 2012). Identifying the features of the coordination abilities improvement in young athletes solves the main tasks of the dancesport initial training stage that is a sensitive period in the coordination sports (Horbenko & Lysenko, 2020). The effects of the proprioceptive training for the improvement of the agility skills in dance sport fitness conditioning were identified (Ljubojevic et al., 2020). Currently, the control criteria in dancesport were determined; the estimation of the qualification level of dance couples in the sports competitions has a subjective-comparative character (Osadtsiv et al., 2018).

4. Conclusions

Based on the theoretical data and the gained experience acquired, some directions to approach the dancesport training in a complex way at initiation groups level were analyzed. In this regard, it was highlighted the appropriate manner of transitioning from the initiation stage in sports activity to the initial sports specialization stage which aims at the participation in the first competitions of Hobby class.

It was also tried to make a modest contribution to the optimization of sports training during this very important period, namely the transition to the specific body technique and to the artistic expression of music and dance character.

The careful systematization of the training, namely a correct planning of the work sequences and methodical steps, as well as the use of a high number of means, influenced appropriately the transition to the initial specialization stage.

Bibliography

1. Ababei, C., & Hagimă, M. (2017). Study regarding the female junior III high jumpers' physical training in athletics. *Annals of the University Dunarea de Jos of Galati: Fascicle XV: Physical Education & Sport Management*, (1).
2. Chirazi, M. (2021). Expressiveness of gestural communication through body actions. Învăţământ, Cercetare, Creaţie, 7(1), 53-59.

3. Cosma, G., Ungureanu, A., & Safta, C. (2014). Development the motor skills through sports dance. *Editorial staff*, 2(24).
4. Franklin, E. N. (2013). Dance imagery for technique and performance. Human Kinetics.
5. Grigore, M. F., Grigore, V., Potop, V., & Cheram, C. (2010). Contributions to dance sport training methods at beginners' level, 6 to 9 years old. *Ovidius University Annals, Series Physical Education & Sport/Science, Movement & Health*, 10(2).
6. Grigore, V., & Grimaschi, T. (2015). Comparative analysis of training methodology efficiency on the motor sphere of junior I dancers. Sport & Society/Sport si Societate.
7. Guarino, L. (2015). Is dance a sport?: A twenty-first-century debate. Journal of Dance Education, 15(2), 77-80.
8. Horbenko, O., & Lysenko, A. (2020). Improving the coordination abilities of young athletes in the initial phase of training in sports dances. *Slobozhanskyi herald of science and sport*, 8(2), 73-83.
9. Hugel, F., Cadopi, M., Kohler, F., & Perrin, P. H. (1999). Postural control of ballet dancers: a specific use of visual input for artistic purposes. International journal of sports medicine, 20(02), 86-92.
10. Ljubojevic, A., Popovic, B., Bijelic, S., & Jovanovic, S. (2020). Proprioceptive training in dance sport: effects of agility skills. *Turkish Journal of Kinesiology*, 6(3), 109-117.
11. Macovei, S., Zahiu, M., & Şulea, R. (2014). Theoretical Arguments for Dance as a Means of Providing Aesthetic Education in Primary School. *Procedia-Social and Behavioral Sciences*, 117, 74-80.
12. Moelants, D. (2003). Dance music, movement and tempo preferences. In *Proceedings of the 5th Triennial ESCOM Conference* (pp. 649-652). Hanover University of Music and Drama.
13. Moraru, C. E. (2017). Improvement of Coordination Abilities through Dancesport among Middle Schoolers. In *Rethinking Social Action. Core Values in Practice* (pp. 558-565). Editura Lumen, Asociatia Lumen.
14. Nanu, L. (2012). A Study on the level of physical and technical training of 8 to 10 years old children in dance sport. *Annals of "Dunarea de Jos" University of Galati. Fascicle XV, Physical Education and Sport Management*, 2, 221-223.
15. Nastase, D.V. (2012). Artistic communication and dance sport particularities. Procedia-Social and Behavioral Sciences, 46, 4869-4873.
16. Năstase, V.D. (2002b). *Tehnica in dansurile latino-americane*, Editura Paralela 45, Bucuresti
17. Năstase, V.D., (2002a). *Tehnica in dansurile standard*, Editura Paralela 45, Bucuresti
18. Osadtsiv T., Sosina V., Lenyshyn V., Matviyas O., & Miagkota I. (2018). Physical and technical preparation control of athletes aged 7-9 years at the

stage of preliminary basic preparation in dance sport. *Journal of Physical Education and Sport*, 18(2), 840-843.
19. Osadtsiv, T., Sosina, V., Muzyka, F., & Vynogradskyi, B. (2015). Evaluation system of technique level for children aged 7-9 (who are engaged in dancesport). *Journal of Physical Education and Sport*, 15(1), 9.
20. Robinson, J., (1982). *Elements du langage choregraphique*, Editura Vigot, Paris
21. Robson, B. E. (2004). Competition in sport, music, and dance. *Medical Problems of Performing Artists*, 19(4), 160-166.
22. Uspuriene, A. B. P., Malinauskas, R. K., & Sniras, S. A. (2019). Effects of Education Programs on Dance Sport Performance in Youth Dancers. *European journal of contemporary education*, 8(1), 136-143.
23. Visan, A., (2002). Pregatirea de dans, in: *Pregatirea artistica in gimnastica de performanta*, (colectiv de autori, coordonator Grigore, V.), A.N.E.F.S., Bucuresti
24. Visan, A., (2005). *Dansul pentru educatia corporala*, Editura Cartea Universitara, Bucuresti
25. Zabrocka, A., Dancewicz, T., & Supinska, A. (2015). Efficiency of the training process in dance sport athletes at the comprehensive stage of training. *Baltic Journal of Health and Physical Activity*, 7(1), 6.
26. Zahiu, M., Manos, M., & Drăghici, G. F. (2020). Coordination in formation dancesport at beginner level. *Discobolul–Physical Education, Sport and Kinetotherapy Journal*, 59(3), 271-288.

STUDY ON USING THE ACROBATIC GYMNASTICS MEANS IN THE INITIAL TECHNICAL TRAINING FOR JUDOKA CHILDREN AGED 8-9 YEARS

Potop Vladimir[1,3], Manolachi Veaceslav[2,3], Andrey Chernozub[4], Manolachi Victor[2,3]

[1]*Department of Physical Education and Sport, University of Pitești, Romania*
[2]*Dunărea de Jos University of Galati, Romania,*
[3] *State University of Physical Education and Sports, Chisinau, Moldova*
[4] *Petro Mohyla Black Sea National University, Mykolayiv, Ukraine*

Abstract

The main purpose of the study is to highlight the use of the acrobatic gymnastics means in the initial technical training for judoka children aged 8-9. This scientific approach led to the organization of a study at the "Mircea Eliade" Sports High School Bucharest, judo department. The experimental group included 10 judokas aged from 8 to 9 years. The study was carried out from October 2021 to April 2022. The specific training in judo is achieved by studying the motor actions that compose the judo techniques. Judo training aims at preparing the body for the specific effort of the combat, in order to successfully participate in competitions. It also aims at developing the physical and mental abilities required by the maximal efforts. The results of the research regarding the basic acrobatic training show up the learning of the acrobatic elements in the rolls and turn-overs group and the influence of these elements on the initial technical training of judokas aged 8-9. The efficiency of the technical execution of two different techniques is demonstrated by performing 10 attempts and noting the number of successful attempts and the number of failed ones. Regarding the technical test no.1, one can notice an average of 7.5 successful attempts and a moderate homogeneity, while in the technical test no. 2 there are 7.7 successful attempts and a very poor homogeneity. Ensuring the relationship between the technical and acrobatic training indicators in the 8-9-year-old judoka highlights moderate mutual connections between the evaluated indicators and strong connections between the acrobatic elements at $p < 0.001$. In this sense, one can conclude that the efficient use of the acrobatic gymnastics means during the training sessions for judokas of 8-9 years old influenced the level of the initial technical training.

Key words: *acrobatic training, initial technical training, judo kids, performance*

1. Introduction

Judo is a modern martial art and one of the most popular sports in the world, attractive in almost every country. It is included in Summer Olympics (Wood, 2013). In terms of health promoting, judo has training systems that cover all age groups (Demiral, 2018). It is considered that judo, practiced as an extracurricular activity and not only, develops a series of social and moral values, namely: courage, self-control, calmness, ambition, the desire to win, the ability to solve unpredictable situations (Vulpe & Macovei, 2015).

Taking into account the trends and modern approaches of the long-term

sports training development in judo, it is advisable to consider it as a specific complex system having its own characteristics. The stage of sports and recreation, as well as the initial training stage can become the basis of the effective preparation of the sports reserves in judo (Altynai et al., 2022). Children's activity during training can contribute to the development of major character traits, especially those of will and moral rectitude mainly required by judo specific relationship (Manolachi et al., 2010).

The age at which people start to practice judo and the level of participation are important variables that must be taken into consideration when adapting the didactic content (García García et al., 2009).

Practicing physical activity enhances the psychomotor and social development of children. Previous research studies suggest a positive effect of sports and martial arts (judo included) practicing on the general fitness and on the development of coordination, motor skills and psychosocial skills (Walaszek et al., 2019).

A lot of space is devoted in the specialized literature to the study of the martial arts practicing effects on the functional performance and muscle strength (Puszczałowska-Lizis et al., 2017).

The field of sports competition develops continuously, so that all athletes have almost the same physical abilities but different mental abilities (Azaiez et al., 2013). There are opinions about the real danger of judo throw movements that could cause injuries in children. Theoretically speaking, the falls produced by judo throwing techniques could be potentially dangerous if poorly managed, especially for children (Sacripanti & De Blasis, 2017).

The main purpose of the study is to highlight the use of the acrobatic gymnastics means in the initial technical training of the judoka children aged 8-9.

2. Material and method

This scientific approach entailed the organization of a study in "Mircea Eliade" High School with sports program of Bucharest, judo department. The experimental group was formed of 10 judokas of 8-9 years old, height 135 ±0.06 cm and body weight 36.80 ±7.11 kg.

The study was conducted from October 2021 to April 2022, aiming to improve the level of technical training using the means of acrobatic gymnastics.

Fitness tests applied:

Technical test 1 – technical procedures, assessed by performing 10 attempts; the number of successful attempts is noted;

Technical test 2 – technical procedures, assessed by performing 10 attempts; the number of successful and failed attempts is noted.

Acrobatic training:

Acrobatic test 1 – forward tuck roll, assessed by performing 10 attempts; the successful ones are noted;

Acrobatic test 2 – side turn-over (cartwheel), assessed by 10 attempts; the successful ones are counted.

The statistical analysis was carried out by means of KyPlot program, calculating the following descriptive indicators: mean, standard deviation (SD) and the coefficient of variation (CV%). The correlative analysis between the technical training indicators and the acrobatic training ones was made using the Pearson's linear correlation coefficient.

3. Results and Discussions

The results of the technical training of 8-9-year-old judokas prove the efficiency of the technical execution of two different techniques, by performing 10 attempts, writing down how many executions were successfully done (table 1).

Table 1. *Results of the technical training of 8-9-year-old judokas, n=10*

Judoka	Technical test 1 (successful executions)		Technical test 2 (successful executions)	
1	Uki-Goshi	10	Ippon Seoi Nage	9
2	O Goshi	8	O Soto Gari	9
3	O Goshi	9	O Soto Gari	7
4	De Ashi Barai	9	Hiza Guruma	8
5	Uki Goshi	6	Kata Gatame	9
6	O Uchi Gari	8	O Goshi	8
7	O Soto Gari	7	Kesa Gatame	8
8	Morote Seoi Nage	7	Kata Gatame	7
9	O Soto Gari	6	Uki Goshi	6
10	O Goshi	5	Kesa Gatame	6
Mean		7.5		7.7
SD		1.58		1.16
Cv%		21.1		1.34

Regarding the technical test 1, an average of 7.5 successful attempts is highlighted, while the technical test 2 has an average of 7.7 successful attempts.

Table 2. *Results of the acrobatic training of 8-9-year-old judokas, n=10*

Statist. Ind.	Acrobatic test 1 (successful attempts)	Acrobatic test 2 (successful attempts)
Mean	8.7	8.1
SD	1.25	1.66
Cv%	14.3	29.5

Notes: Acrobatic test 1 – forward tuck roll; Acrobatic test 2 – side turn-over (cartwheel)

As for the basic acrobatic training evaluated through acrobatic elements belonging to the group of rolls and turn-overs, an average of 8.7 successful attempts is highlighted in rolls and an average of 8.1 successful attempts in

cartwheels. A moderate and poor homogeneity is found out between attempts.

These results reveal the influence of the acrobatic training on the learning of the basic techniques by the 8-9-year-old judokas (table 2).

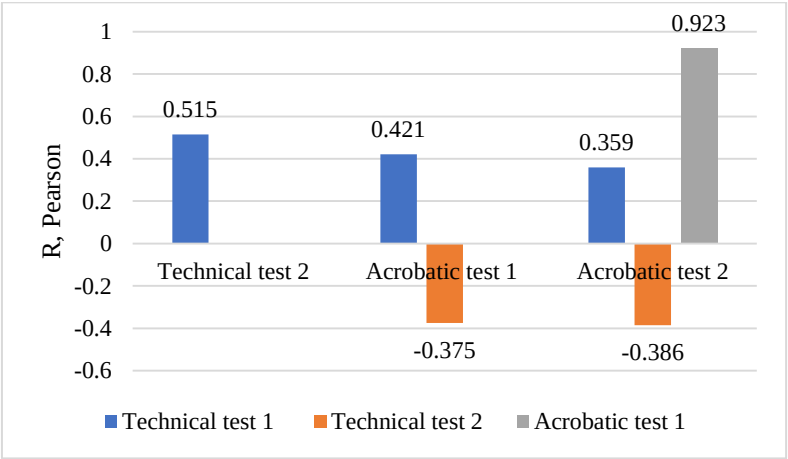


Fig. 1. *Relationship between technical and acrobatic training in judokas aged 8-9*

Regarding the relationship ensured between the technical training and the acrobatic elements in the judokas aged 8-9 years, moderate mutual connections are found out between the evaluated indicators. Strong connections are highlighted between the acrobatic elements at $p< 0.001$ (fig. 1).

In developing the basic skills, it is very important to give children many opportunities to explore their movement potential through educational games. Judo practicing by children (4 to 6 years old) improves brain function, the motor coordination, emotional intelligence, imagination, self-confidence etc. (Demiral, 2018). Thanks to its content and methods used in an attractive form during the training, judo can help to educate the children or improve their motivation with influences in growth, development and education (Neofit, 2010)

Within a research, the emerging evidence suggests that the regular use of CrossFit–based training program for young judokas significantly increased their fight activity in the competitive matches (Avetisyan et al., 2022).

Most sports psychologists believe that in recent years the coaches and athletes have come to the conclusion that they need psychological skills more than physical skills to achieve their goals. A study was conducted to compare some psychological skills of the elite martial arts athletes (judokas, boxers, wrestlers and karate players) from Tunisia (Azaiez et al., 2013). Specific physical training can improve balance control in young judokas compared to the type of training that does not require balance skills (swimming, for example) (Itamar, Schwartz & Melzer, 2013; Jankowicz-Szymanska, Mikolajczyk, & Wardzala, 2015). The identification of the factors involved in judo learning based on an observational study of the technical errors and their relationships was carried out, using a

combination of a self-generated observation tool (OI-JUDO-TG) and a recording tool (developed with the Lince software) (Prieto-Lage, et al., 2020). The bilateral performance and its associations with competition performance and competition volume in judo were investigated by means of Special Judo Fitness Test (Šimenko, & Hadžić, 2022).

The approach of the pedagogical procedures of teaching, experiencing and learning judo in children reveals technical-tactical, socio-educational and cultural-historical aspects. The possible play is a group of pedagogical procedures focused on managing and ensuring the goals of the process of teaching, experiencing and learning judo in terms of content, methodology and didactics (Cavazani et al., 2016).

The rolling and the agility on the ground help to learn how to protect at falls and direct contact with the ground. Indeed, people who practice combat sports such judo get injured rarely, despite the big number of falls that occur, possibly thanks to their gross motor skills, their technical skills and their expertise in performing the rolling techniques. „Ukemi", in which a roll on a transverse axis is performed by isolating the cervical area, is one of the fundamental techniques in judo (Invernizzi et al., 2020).

Based on the results of a study, one can conclude that a new methodology should be proposed and applied in order to teach judo to children, to encourage them to practice this sport and to build a stronger relationship between judo and schools (García García et al., 2009).

The review of the current specialized literature on the practical organization and carrying out of the judo training for healthy pre-school and school-aged children focused on the purpose, forms and methods of training the children. The literature also addressed the safety issues and the risk of injury during judo training sessions. The most common injuries include the upper arm injuries and the lower limbs ones (Kowalczyk et al., 2022). One concern is to examine the behavioral changes of the preschool kids who participate in judo classes, such as reported by their parents (Sterkowicz-Przybycień, Kłys & Almansba, 2014).

4. Conclusions

The analysis of the acrobatic training assessed according to the execution of acrobatic elements from the rolls and turn-overs group highlights the influence of the acrobatic preparation on the technical training of judokas aged 8-9.

The relationship between the technical training and the acrobatic elements in the 8-9-year-old judokas is showed by the moderate mutual connections between the evaluated indicators and by the strong connections between the acrobatic elements.

The results of the study highlight the efficient use of the acrobatic gymnastics means in the initial technical training, in terms of learning the basic techniques, the number of successful attempts and also the results obtained in competitions.

Bibliography

1. García García, J., Carratalá, V., Sterkowicz, S., & Escobar Molina, R. (2009). *A study of the difficulties involved in introducing young children to judo techniques: A proposed teaching programme.*
2. Wood, A. (2013). *Judo*. The Rosen Publishing Group, Inc.
3. Vulpe, I. B., & Macovei, S. (2015). *Students'opinions about the socio-moral values developed by the practice of judo*. Ovidius University Annals, Physical Education and Sport/Science, Movement and Health Series, 15(2), 191-196.
4. Jankowicz-Szymanska, A., Mikolajczyk, E., & Wardzala, R. (2015). *Arch of the foot and postural balance in young judokas and peers*. Journal of Pediatric Orthopaedics B, 24(5), 456-460.
5. Itamar, N., Schwartz, D., & Melzer, I. (2013). *Postural control: differences between youth judokas and swimmers.* The Journal of sports medicine and physical fitness, 53(5), 483-489.
6. Avetisyan, A. V., Chatinyan, A. A., Streetman, A. E., & Heinrich, K. M. (2022). The Effectiveness of a CrossFit Training Program for Improving Physical Fitness of Young Judokas: A Pilot Study. Journal of Functional Morphology and Kinesiology, 7(4), 83.
7. Altynai, B., Taiyrzhan, I., Talgat, K., Tolgar, A., & Nurlan, Y. (2022). Organization of the Training Process of Young Judoists. Cypriot Journal of Educational Sciences, 17(5), 1622-1630.
8. Prieto-Lage, I., Rodríguez-Souto, M., Prieto, M. A., & Gutiérrez-Santiago, A. (2020). *Technical analysis in Tsuri-goshi through three complementary observational analyses*. Physiology & behavior, 216, 112804.
9. Puszczałowska-Lizis, E., Bujas, P., Omorczyk, J., Ambrozy, T., & Markowski, A. (2017). *Feet structure in young capoeira athletes versus untrained peers*. Arch Budo, 13, 93-100.
10. Invernizzi, P. L., Signorini, G., Colella, D., Raiola, G., Bosio, A., & Scurati, R. (2020). *Assessing rolling abilities in primary school children: Physical education specialists vs. generalists*. International Journal of Environmental Research and Public Health, 17(23), 8803.
11. Azaiez, F., Chalghaf, N., Cherif, E., Achour, K., & Souissi, C. (2013). Evaluation of the Mental Skills of the High Level Athletes: Example of the Athletes of Martial Arts. IOSR-JHSS, 10(4), 58-65.
12. Šimenko, J., & Hadžić, V. (2022). *Bilateral throw execution in young judokas for a maximum all year round result*. International Journal of Sports Physiology and Performance, 17(5), 720-725.
13. Manolachi, V., Marin, C., Daniel, R., & Mircea, I. E. (2010). Judo-the alternative method of the contemporary education. Annals of the University Dunarea de Jos of Galati: Fascicle XV: Physical Education & Sport Management, (2).

14. García García, J., Carratalá, V., Sterkowicz, S., & Escobar Molina, R. (2009). A study of the difficulties involved in introducing young children to judo techniques: A proposed teaching programme.
15. Neofit, A. (2010). *Survey on training in judo for children of preschool age (4-6/7 years)*. Annals of the University Dunarea de Jos of Galati: Fascicle XV: Physical Education & Sport Management, (1).
16. Demiral, S. (2018). LTAD model active beginning stage adaptation in judo basic education program (Ukemi, Tachiwaza & Newaza Basic Drills) for 4-6 aged kids. Journal of Education and Training Studies, 6, 1-6.
17. Sacripanti, A., & De Blasis, T. (2017). *Safety on judo children: methodology and results*. arXiv preprint arXiv:1706.05627.
18. Cavazani, R. N., Reverdito, R. S., Drigo, A. J., Scaglia, A. J., Montagner, P. C., & Paes, R. R. (2016). *Sport pedagogy: making the play possible in kids' judo*.
19. Kowalczyk, M., Zgorzalewicz-Stachowiak, M., Błach, W., & Kostrzewa, M. (2022). Principles of Judo Training as an Organized Form of Physical Activity for Children. International Journal of Environmental Research and Public Health, 19(4), 1929.
20. Sterkowicz-Przybycień, K., Kłys, A., & Almansba, R. (2014). *Educational judo benefits on the preschool children's behaviour.* J. Combat Sports Martial Arts, 5, 23-26.
21. Demiral, S. (2018). LTAD Model Active Beginning Stage Adaptation in Judo Basic Education Program (Ukemi, Tachiwaza & Newaza Basic Drills) for 4-6 Aged Kids. Journal of Education and Training Studies, 6, 1-6.
22. Walaszek, R., Chwała, W., Sterkowicz-Przybycień, K., Burdacka, K., Burdacki, M., & Kurowski, P. (2019). *Photogrammetric evaluation of body posture of 6-year-old boys training judo, in three repeated assessments*. Acta of Bioengineering and Biomechanics, 21(3), 149-157.

DYNAMICS OF THE TRAINING MEANS IN THE PREPARATORY PERIOD OF JUNIOR WEIGHTLIFTERS III (AGED 9 TO 12)

Ulareanu Mariu-Viorel[1], Potop Vladimir[2], Stanescu Marius[3], Andrey Chernozub[3], Jurat Valeriu[4]

[1] *Ecological University of Bucharest, Romania*
[2] *University of Pitesti, Romania, State University of Physical Education and Sport, Chisinau, Republic of Moldova*
[3]*Petro Mohyla Black Sea National University, Mykolayiv, Ukraine*
[4] *State University of Physical Education and Sport, Chisinau, Republic of Moldova*

Abstract

The purpose of the paper is to highlight the dynamics of the training means throughout the general preparatory period of junior weightlifters III (9-12 years old). In this regard, a study of case was organized in "Rapid" Sports Club of Bucharest, Weightlifting Department. The study was conducted over a period of 3 months (from January to March 2021) corresponding to the general preparatory period. The subject of the study was one 12-year-old athlete, with a training experience of 6 months, who has not participated in competitions so far. The means of technical and power training (front and back squats, pulls, snatch, clean and jerk, bent over rows) were planned and monitored along the 12 micro-cycles (MiC) of training. The duration of the training sessions was 120 minutes. The results of the study reveal the following values: in MiC 4 the share of the technical training is 30% (116 reps) and the share of the power training is 70% (284 reps); in MiC 8 – 35% technique (175 reps) and 65 % power (325 reps); in MiC 12 – 40% technique (240 reps) and 60% power (360 reps). Regarding the means of technique, in the MiC-s 4 and 8 there were used 60% technical means for snatch and clean & jerk and 40% for snatch and clean & jerk without split; the MiC 12 had a share of 70% for technical snatch and clean & jerk and 30% for snatch and clean & jerk without split. As for the means of power, the MiC-s 4 and 8 used 50% front and back squats, 40% pulls in snatch and clean & jerk and 10% bent over rows; the MiC 12 used 60% front and back squats, 30% pulls in snatch and clean & jerk and 10% bent over rows. Therefore, we can draw the conclusion that an optimal relationship between the technical training means and the power training means during the general preparatory period of Junior III weightlifters (9-12 years old) contributes to the increase of muscle strength and the improvement of the technical performance.

Key words: *monitoring and planning, training, weightlifting, training MiC, technical training, power training*

1. Introduction

Weightlifting training refers to highly technical, explosive multi-joint exercises such as the snatch, clean and jerk and their derivatives (Pichardo et al., 2019). Weightlifting is a dynamic strength and power sport in which two full-body multi-joint lifts are performed in competition: the snatch; the clean and jerk. The training structure of the competitive weightlifters is characterized by the frequent

use of the high intensity resistance exercise movements (Storey & Smith, 2012). Drechsler, A. (1998) reports that 10% of the total time in weightlifting training is assigned to warm-ups, 45% to competitions and specific exercise, 40% to complementary strength exercise, 3% to supplementary exercise and 2% to other sport and training related activities. The high use of specific exercise shows that this one has direct influence on the improvement of weightlifters' performance. The training programs for the competitive weightlifters are primarily based on three principles: exercise specificity, overload and variability (Garhammer & Takano, 2003).

The modern training system requires a constant improvement of the weightlifters' technical skills focused on the achievement of efficient technical actions for competitive preparation (Piven & Dzhym, 2015)

Current research highlights that resistance training can be a safe, effective and beneficial activity for children and adolescents, provided that skilled professionals supervise all training sessions and give age-appropriate instructions about the lifting procedures (Faigenbaum & Myer, 2010).

The scientific literature suggests different pathways that can lead to elite performance. These pathways are early specialization (namely the high volume of sport-specific practice) or early diversification (variety of sports and activities). There is evidence that late specialization is the key to success for „Sports in centimeters, grams or seconds" (cgs), weightlifting inclusively (Chaabene et al., 2019).

It was found out that for reaching the high performance in weightlifting it is necessary to know and study the performance capacity indicators from the very beginning of the competitive activity, in order to be able to anticipate and plan the training correctly (Ulăreanu, Murărețu & Potop, 2019).

The purpose of the study is to highlight the dynamics of the training means during the general training period of the junior weightlifters III (9-12 years old).

2. Material and method

The research was conducted within the "Rapid" Sports Club of Bucharest, Weightlifting department, throughout a 3-month-period (January - March 2021), corresponding to the general preparatory period.

The subject of the study was one 12-year-old athlete, with a training experience of 6 months, without any participation in competitions. During the 12 training micro-cycles(MiC), the technical and power training means were monitored (front and back squats; snatch pulls; clean and jerk pulls; bent over rows). Each training session lasted 120 minutes. In order to highlight the dynamics of the means in a training MiC, the MiC-s 4, 8 and 12 were selected.

Means used in MiC 4 for technical training 30% = 116 reps; power training 70% = 284 reps; total number of reps (N.R.) = 400.

Means used in MiC 8 for technical training 35% = 175 reps; power training 65% = 325 reps and N.R. = 500.

Means used in MiC 12 for technical training 40% = 240 reps; power training 60% = 360 reps and N.R. = 600.

3. Results and Discussions

The results of planning the means of power and technical training during the general preparatory period are listed in tables 1, 2 and 3, corresponding to the micro-cycles (MiC) 4, 8 and 12.

Table 1. *Monitoring and planning the training means in micro-cycle no. 4, preparatory period (25 – 30.01.2021)*

Days of the week	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday**
Volume (%)	**19.75**	**16.50**	**17.50**	**16.00**	**17.50**	**12.75**
Int. (%), NR	**Back squat (31)**	**Front squat (16)**	**Back squat (22)**	**Front squat (14)**	**Back squat (22)**	**Back squat (15)**
85	3x3	3;2;2		3;2;3		
90	4x3	2;3;2;2	4x3	3x2	4x3	3x3
95	3;2;2;3		3;2;2;3		3;2;2;3	3x2
Int. (%), N.R.	**Snatch pull (19)**	**Clean&Jerk pulls (17)**	**Snatch pulls (19)**	**Clean&Jerk pulls (17)**	**Snatch pulls (19)**	**Clean&Jerk pulls (18)**
90	4x3	3;2;3;2;3;2;2	4x3	3;2;3;2;3;2;2	4x3	4x3
95	2;3;2		2;3;2		2;3;2	
100						3x2
Int. (%), N.R.	**Sm. Th (14)**	**Ar. Th (21)**	**Sm. Th (14)**	**Ar. Th (21)**	**Sm. Th (14)**	
85	5x2	2+1;1+2;1+2	4x2	2+1;1+2;1+2	4x2	
90	1;2;1	1+2;1+1;1+2	1;2;1	1+2;1+1;1+2	1;2;1	
95	1;1	2x(1+1)	1;1	2x(1+10	1;1	
Int. (%), N.R.	**Bent over (15)**	**Sm FF (12)**	**Bent over (15)**	**Sm FF (12)**	**Bent over (15)**	**Sm FF (18)**
80		6x2		6x2		
85						
90						6x3
95	5x3		5x3		5x3	
Total N.R.	79	66	70	64	70	51

Notes. NR – number of reps; Int. – intensity; Training means (**Mij. Preg**.) 1: back squats, front squats; Snatch pulls (**Tr Sm**), Clean and Jerk pulls (**Tr Ar**); technical snatch (**Sm. Th**), technical clean and jerk (**Ar. Th**); Bent over; Snatch without split (**Sm. F.F.**).

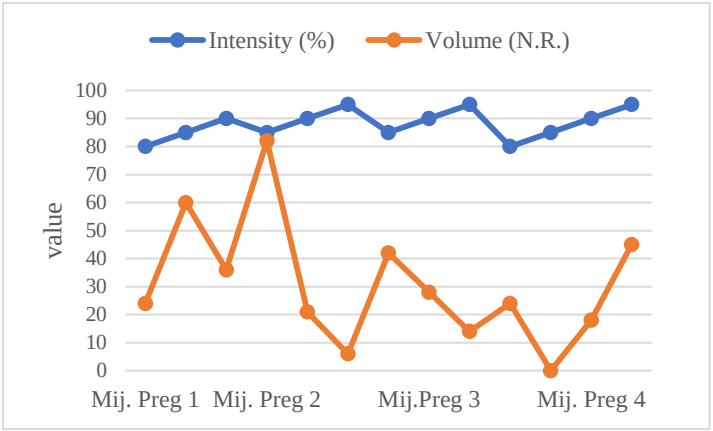


Fig. 1. *Volume – intensity relationship in MiC 4 of training*

Table 2. *Monitoring and planning the training means in micro-cycle no. 8, preparatory period* (22-27.02.2021)

Days of the week	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday**
Volume(%)	**18.40**	**17.00**	**18.40**	**17.20**	**16.60**	**12.40**
Int. (%), N.R.	**Back squat (25)**	**Front squat (23)**	**Back squat (25)**	**Front squat (23)**	**Sm. Th (18)**	**Back squat (26)**
80	4;4;3		4;4;3			
85	3;3;2	4;3;3	3;3;2	4;3;3	3;2;3;2	
90	3x2	3x3	3x2	3x3	4x2	4x4
95		2x2		2x2		3;2;3;2
Int. (%), N.R.	**Sm FF (19)**	**Sm FF (19)**	**Sm FF (19)**	**Sm FF (16)**	**Ar. Th (28)**	
85	3;3;3;2	3;3;3;3	3;3;3;2	3;3;3	4x(2+2)	
90	4x2	3;2;2	2;2;2;2	3;2;2	4x(1+2)	
Int. (%), N.R.	**Snatch pulls(24)**	**PP FF + AR FF (21)**	**Snatch pulls (24)**	**PP FF + AR FF (21)**	**Clean&Jerk pulls (18)**	**Clean&Jerk pulls (24)**
85		3x(2+2)		3x(2+2)		
90	4;3;4;4	3x(1+2)	4;3;4;4	3x(1+2)	4x3	4;3;4;3
95	3x3		3x3		3x2	3;2;3;2
Int. (%), N.R.	**Ar. FF (24)**	**Clean&Jerk pulls (22)**	**Ar. FF (24)**	**Clean&Jerk pulls (26)**	**Back squats (19)**	**Ar. FF (12)**
80						3x(2+2)
85					3x3	
90	6x(2+2)	3x4	6x(2+2)	4x4	3x2	
95		4;3;3		4;3;3	2x2	
Total NR	**92**	**85**	**92**	**86**	**83**	**62**

Notes. NR – number of reps; Int. – intensity; Training means (**Mij. Preg.**) 1: Back squat, Front squat; Technical snatch (**Sm. Th**); Snatch without split (**Sm FF**), Technical Clean & Jerk (**Ar. Th**); Snatch pulls; dip without split and jerk without split (**PP FF + AR FF**), Clean & Jerk pulls; Clean & Jerk without split (**Ar. FF**), Clean & Jerk pulls (**Trageri Ar**)., Back squats

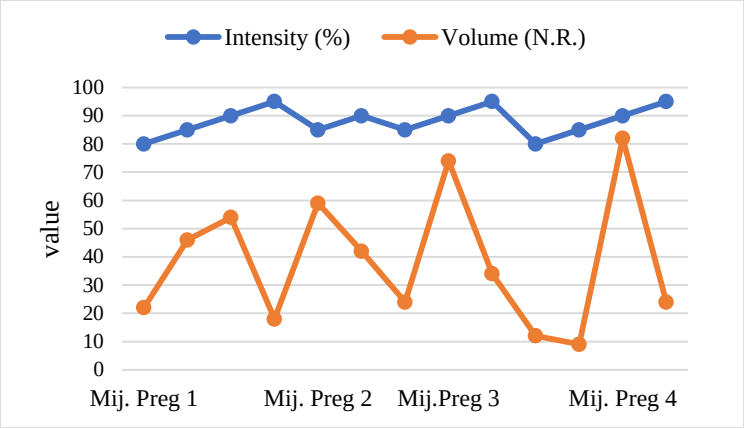


Fig. 2. *Volume – intensity relationship in MiC 8 of training*

Table 3. *Monitoring and planning the training means in micro-cycle no. 12, preparatory period* (22-27.03.2021)

Days of the week	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday**
Volume(%)	**17.50**	**16.00**	**18.10**	**16.00**	**17.30**	**15.10**
Int. (%), NR	**Back squats (23)**	**Front squats (23)**	**Back squats (23)**	**Front squats (27)**	**Back squat (27)**	**Sm FF (23)**
80						3;2;3;2;3;2
85						4x2
90	4;4;3;3	4;3;3;3	4;4;3;3	4;3;3;3;4	4;4;3;3;4	
95	2;3;2;2	3;2;3;2	2;3;2;2	3;2;3;2	2;3;2;2	
Int. (%), NR	**Sm Forță (19)**	**Ar. Th suporți (20)**	**Sm Forță (19)**	**Ar. Th suporți (20)**	**Sm. Th (20)**	**Ar. Th suporți (20)**
80		4x3		4x3		4x3
85	3;3;2;3	4x2	3;3;2;3	4x2	3x3	4x2
90	4x2		4x2		3;2;2	
95					2x2=4	
Int. (%), NR	**Tr Sm (27)**	**Tr. Ar (32)**	**Tr Sm (31)**	**Tr Ar (31)**	**Ar Th (32)**	**Back squats (28)**
85					4x(2+2)	
90	4;3;4;4	4x4	4;3;4;4;4	4x4	3x(2+2)	4x4
95	4x3	4;3;4;3;2	4x3	4;3;4;4	2x(1+1)	4x3
Int. (%), NR	**PP FF+Ar împins (36)**	**Sm FF (21)**	**PP FF+Ar împins (36)**	**Sm Forța (18)**	**Bent over (25)**	**Tr Ar (20)**
80	6x(2+2)	7x3	6x(2+2)	6x3		
85	4x(1+2)		4x(1+2)			
90					6x3	4x3
95					2;3;2	4x2
Nr. reps	**105**	**96**	**109**	**96**	**104**	**91**

Notes. NR – number of reps; Int. – intensity; Back squats, Front squats, Snatch without split (**Sm FF**); Power snatch (**Sm Forță**), Technical Clean &Jerk racks (**Ar. Th suporți**), Technical snatch (**Sm. Th**); Snatch pulls (**Tr Sm**), Clean and Jerk pulls (**Tr. Ar**), Back squats; dip without split with

pushed jerk (**PP FF+Ar împins**), Snatch without split (**Sm FF**), Power snatch **(Sm Forța)**, Clean & Jerk pulls (**Tr Ar**), Bent over.

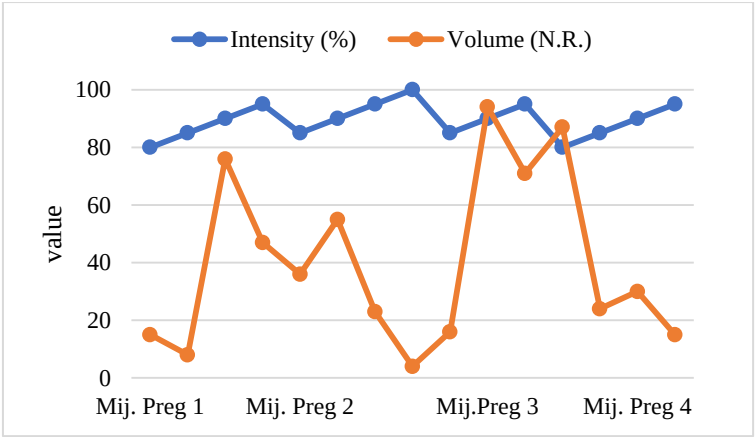


Fig. 3. *Volume – intensity relationship in MiC 12 of training*

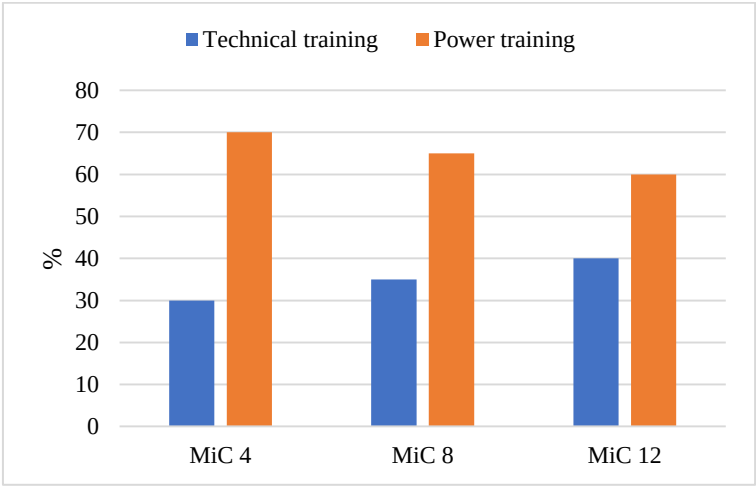


Fig. 4. *Share of the technical and power training within the training micro-cycles of the preparatory period in the 9-12-year-old weightlifters*

Fig. 4 shows the share of the technical and power training in the training micro-cycles of the preparatory period in the weightlifters aged 9-12. So, in MiC no. 4 the technical training means represented 30% = 116 reps, the power means 70% = 284 reps and the number of reps (N.R.) = 400. The MiC 8 has the following values: means for technical training 35% = 175 reps; power training 65% = 325 reps and N.R. = 500, while in MiC 12 the means for technical training 40% = 240 reps, power 60% = 360 reps and N.R. = 600.

The results of the monitoring and planning of the training means in the preparatory period highlight the relationship of effort parameters (volume – intensity) in each training means used within the micro-cycles (MiC).

In MiC 4 (table 1, fig. 1) the training means 1 (**Mij. Preg.)** were used as follows: 30% (120 reps) at the intensity of 80% - 24 reps; 85% - 60 reps and 90% - 36 reps; for the training means 2 (**Mij. Preg.)** it was used 27.25% (109 reps) at the intensity of 90% - 82 reps, at 95% - 21 reps and at 100% - 14 reps. For the **Mij. Preg. 3** it was used 21% (84 reps), at the intensity of 85% - 42 reps, at 90% - 28 reps and at 95% - 14 reps. In the case of **Mij. Preg. 4** – 21.75% (87 reps) at 80% - 24 reps, at 90% - 18 reps and at 95% - 45 reps.

During the MiC 8 (table 2 and fig. 2) the **Mij. Preg. 1** used 28% (140 reps) at the intensity of 80% - 22 reps, at 85% - 46 reps, at 90% - 54 reps, at 95% - 18 reps; for **Mij. Preg 2,** 20.2% (101 reps) were used at the intensity of 85% - 59 reps and at 90% - 42 reps; the **Mij. Preg. 3** used 26.4% (132 reps), at the intensity of 80% - 12 reps, at 85% - 24 reps, at 90% - 74 reps and at 95% - 34 reps. As for the **Mij. Preg. 4** – 25.4% (127 reps) at 80% - 12 reps, at 85% - 9 reps, at 90% - 82 reps and at 95% - 24 reps.

In the MiC 12 (table 3 and fig. 3) for the **Mij. Preg. 1:** 24.3% were used (146 reps) at the intensity of 80% - 15 reps, at 85% - 8 reps, at 90% - 76 reps and at 95% - 47 reps; for the **Mij. Preg 2** it was used 19.6% (118 reps) at the intensity of 85% - 36 reps, at 90% - 55 reps, at 95% - 23 reps and at 100% - 4 reps; for **Mij. Preg. 3** it was used 30.1% (181 reps), at the intensity of 85% - 16 reps, at 90% - 94 reps and at 95% - 71 reps; for the **Mij. Preg. 4** – 25.9% (156 reps) at 80% - 87 reps, at 85% - 24 reps, at 90% - 30 reps and at 95% - 15 reps.

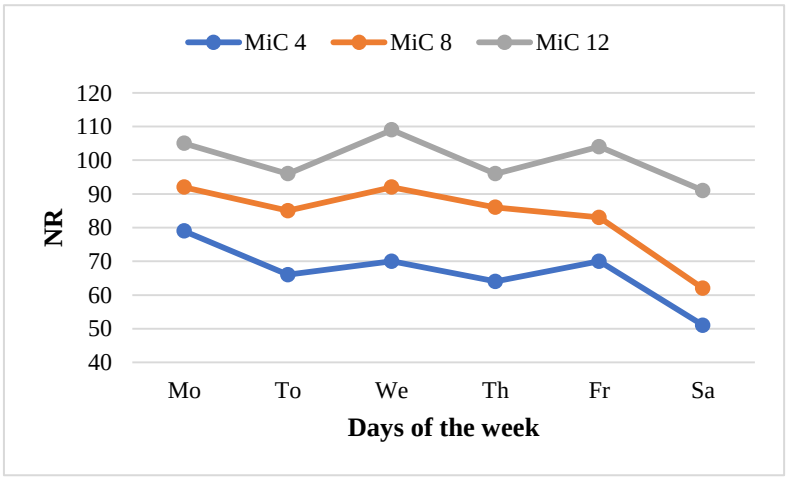


Fig. 5. *Dynamics of the number of repetitions (reps) during the training micro-cycles in the preparatory period of the 9-12-year-old weightlifters*

Fig. 5 highlights the dynamics of the number of reps within the training micro-cycles in the preparatory period of the 9-12-year-old weightlifters. Fig. 6

shows the diagram of the relationship between the volume and intensity of effort along the training micro-cycles of the preparatory period for the weightlifters aged 9-12 years.

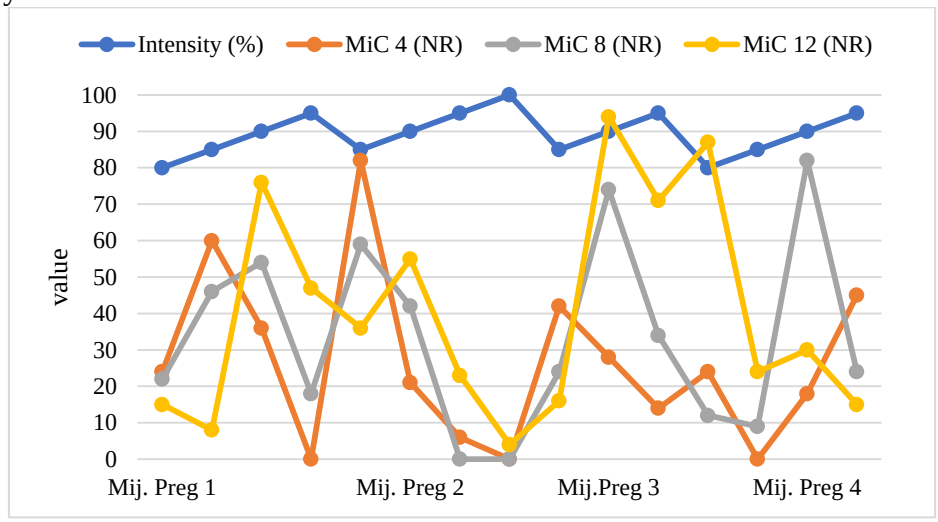


Fig. 6. *Relationship of the volume and intensity of effort in the training micro-cycles of the preparatory period for the 9-12-year-old weightlifters*

Regarding the la planning of the specific means according to the objectives of the same mezzo-cycle of training, one can highlight the individualization and the continuity of the training. The intensity of the application of the training specific means in the competitive mezzo-cycles points out the share of technical and power means for each micro-cycle, with a greater emphasis on the power workouts (Potop & Ulareanu, 2011). Studying the special fitness of the junior weightlifters in the preparatory period of the general training stage helped to determine the optimum indicators for training through the shock method. The power indicators as well were determined in the total of the combined exercises (Piven & Dzhym, 2015).

The development of the special physical training, based on experimental methods of pre-basic training individualization in the 12-13-year-old weightlifters, can significantly improve the results in competitions. The athletes have a better technique in the classic exercises and the injuries are fewer (Orlov, 2015).

The combination of the training means content during the technical training sessions for snatch lift at junior level highlights the use of the method of weight gradual lifting. Specific power exercises are used – both front squats and clean & jerk pulls (Ulăreanu et al., 2021).

Typical high-volume phases (preparatory ones) for weightlifters include multiple training sessions per week (6-15), several exercises per training session (3-6), multiple sets per exercise (4-8) and more reps per set (4–6). Typical high-intensity phases (competitive ones) for weightlifters contains fewer training sessions per week (5-12), fewer exercises per training session (1-4), fewer sets per exercise (3-5) and fewer reps per set (1–3) (Garhammer & Takano, 2003). The

effects of long-term training programs that combine different forms of resistance training on the motor skill performance in adolescent male weightlifters were studied (Pichardo et al., 2019). Specific evaluations of the technical training in weightlifting workouts were made, monitoring the technical level of the athletes in both types of lifts (Dimofte, 2015).

There were also analyzed the effects of the short-term weightlifting training on the muscle strength, peak power, sprint performance and ball throwing velocity of the male handball players (Hermassi et al., 2019). Several case studies and retrospective questionnaires about the resistance exercises and competitive sports (weightlifting and power-lifting) reveal that injuries occurred in young weightlifters, although most can be classified as accidental ones. The lack of skilled instruction leading to a poor technique and the inappropriate training tasks may explain, at least in part, some of the injuries reported (Faigenbaum & Myer, 2010). The influence of resistance training with or without weightlifting on the injury risk factors and resistance training skills were investigated in male athletes (Pichardo, 2021).

The comparison of the effects of the combined plyometric and resistance training in boys (12-15 years old) suggests that adding plyometric training to a resistance training program may be more beneficial than the resistance training and static stretching for improving upper and lower body strength (Faigenbaum et al., 2007). Differences in the technical pattern of the snatch lift in elite junior weightlifters of distinct weight categories were analyzed. This confirms that a successful lift is based on multiple factors (Campos et al., 2006). The time curves of changes in the snatch lift record scores and their variations along a two-year training cycle were determined in young weightlifters (Czaplicki et al., 2019).

4. Conclusions

The use of the technique means in MiCs 4 and 8 highlights the values of 60% for technical snatch and clean & jerk and 40% for snatch and clean & jerk without split. As for the MiC 12, a percentage of 70% was assigned for technical snatch and clean & jerk and 30% for snatch and clean & jerk without split.

Concerning the use of the power means in MiCs 4 and 8, the following values were found out: 50% back and front squats; 40% pulls in snatch and clean & jerk; 10% bent over rows. The MiC 12 used 60% back and front squats, 30% pulls in snatch and clean & jerk; 10% bent over rows.

Ensuring an optimum relationship between the technical training means and the power training ones in the general preparatory period of Junior weightlifters III (9-12 years old) leads to the increase of muscle strength and to the improvement of technical performance parameters.

Bibliography

1. Campos, J., Poletaev, P., Cuesta, A., Pablos, C., & Carratalá, V. (2006). Kinematical analysis of the snatch in elite male junior weightlifters of different

weight categories. *The Journal of Strength & Conditioning Research*, 20(4), 843-850.
2. Chaabene, H., Prieske, O., Lesinski, M., Sandau, I., & Granacher, U. (2019). Short-term seasonal development of anthropometry, body composition, physical fitness, and sport-specific performance in young Olympic weightlifters. *Sports*, 7(12), 242.
3. Czaplicki, A., Szyszka, P., Sacharuk, J., & Jaszczuk, J. (2019). Modelling record scores in the snatch and its variations in the long-term training of young weightlifters. *Plus one*, 14(12), e0225891.
4. Dimofte, C. (2015). Specific appreciation elements of the technical presentation of weightlifters aged 10 to 12. *The annals of the "Ştefan Cel Mare" University*, 25.
5. Drechsler A. (1998). *The weightlifting encyclopedia: A guide to world class performance*. 1st ed. Flushing: A is A Communications.
6. Faigenbaum, A. D., & Myer, G. D. (2010). Resistance training among young athletes: safety, efficacy and injury prevention effects. *British journal of sports medicine*, 44(1), 56-63.
7. Faigenbaum, A. D., McFarland, J. E., Keiper, F. B., Tevlin, W., Ratamess, N. A., Kang, J., & Hoffman, J. R. (2007). Effects of a short-term plyometric and resistance training program on fitness performance in boys age 12 to 15 years. *Journal of sports science & medicine*, 6(4), 519.
8. Garhammer, J., & Takano, B. (2003). Training for Weightlifting. In Training for weightlifting. *Strength and power in sport*, 2, Blackwell Science, Chapter 25, 502-515.
9. Hermassi, S., Schwesig, R., Aloui, G., Shephard, R. J., & Chelly, M. S. (2019). Effects of short-term in-season weightlifting training on the muscle strength, peak power, sprint performance, and ball-throwing velocity of male handball players. *The Journal of Strength & Conditioning Research*, 33(12), 3309-3321.
10. Orlov, A. A. (2015). Optimization of training load among weightlifters during pre-basic training. *Pedagogics, psychology, medical-biological problems of physical training and sports*, 19(1), 57-61.
11. Pichardo, A. W., Oliver, J. L., Harrison, C. B., Maulder, P. S., Lloyd, R. S., & Kandoi, R. (2019). Effects of combined resistance training and weightlifting on motor skill performance of adolescent male athletes. *The Journal of Strength & Conditioning Research*, 33(12), 3226-3235.
12. Pichardo, A. W., Oliver, J. L., Harrison, C. B., Maulder, P. S., Lloyd, R. S., & Kandoi, R. (2021). Effects of combined resistance training and weightlifting on injury risk factors and resistance training skill of adolescent males. *Journal of Strength and Conditioning Research*, 35(12), 3370-3377.
13. Piven, O. B., & Dzhym, V. Y. (2015). Study of junior weight lifters' special fitness with different methods of speed-power training in preparatory period of

general preparatory stage. *Pedagogics, psychology, medical-biological problems of physical training and sports*, 19(9), 51-56.

14. Potop V., & Ulareanu M.V. (2011). Planning of specific means and dynamics of athletic shape in performance weightlifters' training. *Ovidius University Annals, Series Physical Education and Sport / Science, movement and health*, 11(2 supl), 414-420.
15. Storey, A., & Smith, H. K. (2012). Unique aspects of competitive weightlifting: performance, training and physiology. *Sports medicine*, 42, 769-790.
16. Ulăreanu M.V., Potop V., Jurat V., Triboi V., Cojocaru M.V. (2021). Content of the combination of the training means in weightlifting workouts. *In Proceedings International Scientific Conference „Actualities and Perspectives of Physical Education and Sport Sciences", 2021* (pp.57-66), Ecological University of Bucharest.
17. Ulăreanu, M. V., Murărețu, D. C., & Potop, V. (2019). Comparative Analysis of the Performance Results of Junior Weightlifters Aged 9 to 12 Years. *Gymnasium*, 20(2), 169-179.

THE USE OF SPECIFIC MEANS WITHIN THE PHYSICAL TRAINING FOR FENCING IN JUNIOR ATHLETES OF 15-18 YEARS OLD

Pavel Liviu Paul [1], Potop Vladimir [2], Cojocari Olga [3]

[1] *Middle School no. 136, Bucharest, Romania*
[2] *University of Pitesti, Pitesti, Romania*
[3] *Children and Youth Specialized Sports School of Olympic Reserve for Fencing, city of Chisinau, Republic of Moldova*

Abstract
This paper aims at highlighting the use of the specific means in the physical training of the female fencers aged 15-18. Thus, a study was conducted within the national fencing team (foil) – juniors, with a number of 8 female athletes.
The research was carried out in March 2021 and January 2022. Tests and fitness testing evaluated: a) physical training: standing long jump (cm), spring, standing high jump (cm), abdominal strength in 30 sec.; b physical training: accuracy hit (number of hits in 30 sec) and Balestra move – jump lunge (no. reps / 60 sec); c) technical and tactical training in competition during the National Junior Championship 2021 and 2022 and d) performance level. The content of the physical training means was used during the preparation for developing the agility, execution speed, long attack, endurance, balance and tempo.
The results of the study highlight the following matters: improvement of the lower limbs muscular strength and abdominal strength with significant differences (at $p<0.05$ and $p<0.01$); improvement of the technical execution by increasing the number of accurate hits ($p< 0.01$) and improvement of the jump lunge (Balestra move) ($p< 0.01$); refinement of the direct attack, compound attack in competitions in group phase, elimination phase and in total; increase of execution accuracy in parry-riposte in groups and in total; increase of the number of accurate executions in competitions both in the phase of direct elimination (higher phases of the competitions) and in the round group victories; increase of the number of touches made, decrease of the number of touches received and better results in competition.

Key words: *muscular strength, technical training, technical and tactical training, performance*

1. Introduction

Fencing is a sport that requires a great level of necessary tactical thinking, physical and technical training, strong will of the fencer. The results of the athlete depend on all these elements. Because of its unique asymmetry in movement, fencing places high physiological demands in terms of neuro-muscular coordination, strength and power; it also has an important impact on the musculoskeletal system. The high level of motor coordination (especially the accuracy of hands movement) is proven by the research showing that both hemispheres of the brain are involved in controlling the action of each of the upper limbs (Chen et al., 2017; Witkowski et al., 2018; Pavel et al., 2020).

As for the physical demands of fencing competitions, they involve the non-lactic and lactic anaerobic metabolism and the aerobic metabolism; they are also influenced by age, gender, level of training and technical-tactical patterns used related to the opponent (Roi & Bianchedi, 2008). The technical and tactical training in performance fencing has a strong character of individualization /personalization, depending on the specific features and physical skills of each individual athlete, on his/her mental- volitional profile (Pavel, Potop & Jurat, 2021).

A systematic review with a meta-analysis approach can provide relevant progress in this field. Such an approach allows also the identification of the gaps and limitations in the specialized literature, thus providing avenues for further research (Murad, Asi, Alsawas & Alahdab, 2016). In this sense, the use of sports biomechanical analysis makes it possible to thoroughly examine the athletic movements in order to improve performance and/or reduce the risk of injury (Adesida, Papi & McGregor, 2019).

The purpose of the research is to highlight the use of the specific means in the physical and technical-tactical training of the female fencers of 15-18 years old.

2. Material and method

This scientific approach led to the organization of an experimental study with a group of 8 young female fencers (foil) aged 15-18, members of the Romanian national team. The research was conducted in two stages: initial one – March 2021 and final one – January 2022.

Fitness testing and tests evaluated:

a) Physical training:

- SL – standing long jump (cm);
- D – spring, standing high jump (cm);
- FA –abdominal strength (crunches, flexed knees, number of reps / unit of time in 30 sec);
- FG (squat lunge) – (no. of reps / 30 sec).

b) Specific physical training:

- LP – accuracy hit (no. of hits in 30 sec);
- FS – Balestra – forwards jump and lunge „BALESTRA" (number of reps / unit of time in 60 sec).

c) *Technical and tactical training in competitions during the Junior National Championships* 2021 and 2022, evaluated indicators: AD –direct attacks; AC – compound attacks; PR – parry-riposte; AD and AC - successful offensive actions (touches made/valid); PR - defensive actions (touches made/valid).

d) *Performance level* – the following indicators were monitored: V.T.- round group victories; T.D. – touches made; T.P.- touches received; V.E.D. – victories in direct eliminations; R. - result in competitions (place in the final ranking); C1, C.N.J., 2021 - National Junior Championship, March 2021; C2 - C.N.J., 2022 - National Junior Championship, January, 2022.

Content of the means of physical training:

1. Agility:

- "on guard" position, the leading food pointing forwards, as fast as possible movements, 4x30 sec, pause of 30 sec.;
- Same exercise with the rear foot 4x30 sec, pause of 30 sec.;
- Front and rear foot 4x30 sec, pause of 30 sec.;
- "on guard" position, both feet laterally, at speed signal and when the partner raises the hand, going around on the other side 4x;
- Legs crossover, forward 4x;
- Legs crossover, backward 4x etc.

2. Footwork 1:

- "on guard" position, running on the spot without raising the knees while maintaining the center of gravity at the same level for 15 sec., pause of 10 sec. During the pause – stand up position;
- Idem with movement one piste length, both forward and backward;
- Idem 1-3, but with knees up and paying attention to the center of gravity;
- After signal, 2 small steps forward -2 big steps forward. Low speed of execution;
- Idem backward etc.

3. Footwork 5 (long attack):

- Small steps forward – low speed (3 pistes);
- Small steps at the signal of pace change and sustaining (3 pistes);
- Small steps at pace change signal, other change at next signal, (3 pistes);
- Small steps of average speed at appel-lunge signal (idem with 2 steps lunge) (5 reps for each one) etc.

4. Footwork 6 (endurance):

- 3x3 pistes, average speed with small continuous steps;
- 3x3 pistes, average speed, small steps from the end of the piste up to each line and back;
- 6 pistes, accelerated speed, stop at 2 m, lunge and return to "on guard" position, acceleration backward up to the end of the piste;
- 6 pistes – same exercise as above, only that there is a finishing lunge step at the end of the piste etc.

5. Balance and tempo:

- "on guard" position, front leg up;
- Idem, with jump and landing on the rear foot too, without putting down the front foot;
- Idem, but putting down the front foot on the heel;
- Idem, landing and 2 steps forward;
- Idem, landing and step backward etc.

The statistical analysis was carried out with KyPlo 6.0 program, taking into account the following indicators: mean, SD – standard deviation; CV% – coefficient of variation; t-Test, Paired Comparison for Means.

3. Results and Discussions

Table no. 1 shows the results of the tests for the evaluation of physical training level in the female fencers aged 15-18.

Table no.1 - *Physical training of the female fencers aged 15-18, n=8*

Statistical indicators	**SL (cm)**		**D (cm)**		**FA (no. of reps)**	
	TI	TF	TI	TF	TI	TF
mean	**180.9**	**186.9**	**30.75**	**33.87**	**23.00**	**24.00**
SD	6.47	7.52	4.20	3.14	2.62	2.62
CV%	3.57	4.03	13.65	9.25	11.38	10.9
t; P-Value	3.715**; 0.007		4.889**; 0.002		2.645*; 0.033	

Notes: SL – standing long jump; D – spring, standing high jump; FA – abdominal strength (crunches, flexed knees, number of reps / time unit in 30 sec); SD – standard deviation; t-Test, Paired Comparison for Means

The analysis of results highlights the increase of final testing values for standing long jump by 6 cm ($p< 0.01$), for high jump by 3.12 cm ($p< 0.01$) and for abdominal strength by one repetition in 30 sec. ($p< 0.05$).

The results of the specific physical training in terms of accuracy hit and jump-lunge are listed in table no. 2.

Table no. 2 - *Specific physical training of the female fencers aged 15-18*

Statistical indicators	LP (no. of reps)		FS (no. of reps)	
	TI	TF	TI	TF
mean	**17.37**	**19.5**	**21.25**	**22.87**
SD	1.68	1,77	1.91	1.88
CV%	9.69	9,09	8.98	8.24
t; P-Value	4.822**; 0.002		3.869**; 0.006	

Notes: LP – accuracy hit; FS – Balestra, jump-lunge

The results of the calculations highlight an increase of the number of accuracy hits in final testing by 2.13 reps in 30 sec. ($p< 0.01$) and the improvement of the jump-lunge (Balestra) by 1.62 reps in 60 sec. ($p< 0.01$).

Table no. 3 presents the competitive results of the technical and tactical training in the National Junior Championships of 2021 and 2022.

The results in the final testing indicate: decrease of the number of executions in direct attacks (AD) by 1.79 in groups, by 2.72 in elimination and by 4.2 in total; decrease of the compound attacks (AC) by 0.25 executions in groups, by 0.73 in elimination and by 0.26 in total; decrease of executions in parry-riposte (PR) by 1.45 in groups and by 0.8 in total and the increase by 0.39 executions in elimination.

Table no. 3 - *Results of the technical-tactical training in competitions: National Junior Championship*

Athletes	AD (no. of reps)						AC (no. of reps)						P R (no. of reps)					
	2021			2022			2021			2022			2021			2022		
	groups	elim.	total	groups	elim.	total	groups	elim.	total	groups	elim.	total	groups	elim.	total	groups	elim.	total
CE	11	12	23	9	11	20	12	11	23	13	12	25	7	8	15	2	8	10
VK	10	11	21	5	5	10	13	14	27	12	16	28	3	3	6	2	9	11
DA	8	10	18	6	8	14	8	10	18	6	7	13	1	4	5	1	1	2
ST	5	6	11	4	7	11	9	11	20	9	12	21	3	5	8	1	2	3
RP	7	7	14	6	6	12	5	6	11	7	8	15	1	1	2	1	1	2
TM	5	9	14	8	5	13	6	8	14	8	12	14	3	5	8	2	7	9
BA-M	8	9	17	*	*	*	4	2	6	*	*	*	2	3	5	*	*	*
CM	6	8	14	2	2	4	9	11	20	1	2	4	1	1	2	1	1	2
mean	**7.5**	**9.00**	**16.5**	**5.71**	**6.28**	**12.0**	**8.25**	**9.12**	**17.4**	**8.00**	**9.85**	**17.14**	**2.62**	**3.75**	**6.37**	**1.43**	**4.14**	**5.57**
SD	2.20	3.00	4.03	2.36	2.81	4.79	3.19	3.72	6.75	4.00	4.56	8.15	1.99	2.31	4.17	0.53	3.67	4.19
CV%	29.4	22.2	24.4	41.3	44.7	39.9	38.7	40.7	38.9	50.0	46.2	47.5	76.0	61.7	65.4	37.4	88.6	75.3

Notes: elim. – elimination; SD – standard deviation; CV% - coefficient of variation; AD – direct attacks; AC – compound attacks; PR – parry-riposte; AD and AC - successful offensive actions; PR - defensive actions; Competition 1 – National Junior Championship 2021, March 2021; Competition 2 National Jun. Champ. 2022.

Table no. 4 - *Performance level*

Athletes	V.t.G		T.D.		T.P.		V.E.D. touches made/received				R.(ranking place)	
	2021	2022	2021	2022	2021	2022	2021		2022		C1- 2021	C2- 2022
CE	5	4	20	22	5	6	60	32	60	36	1	1
VK	5	5	25	25	8	11	57	34	51	47	2	2
DA	5	5	25	25	7	4	39	24	29	27	3	5
ST	5	5	25	23	6	16	54	28	35	28	3	3
RP	4	4	23	23	8	11	25	34	27	30	8	7
TM	4	4	24	21	8	9	37	24	36	25	6	3
BA-M	4	*	23	*	10	*	19	30	*	*	9	*
CM	5	5	25	23	10	10	37	21	9	15	5	9
mean	**4.62**	**4.57**	**23.75**	**23.14**	**7.75**	**9.57**	**41.0**	**28.4**	**35.3**	**29.7**	4.62	4.28
SD	0.52	0.53	1.75	1.46	1.75	3.87	14.9	4.95	16.6	9.89	2.87	2.87
CV%	11.2	11.7	7.37	6.32	22.6	40.3	36.4	17.4	47.1	33.3	62.1	66.9

Notes. Competition 1- National Junior Champ. 2021, Competition 2 - National Junior Champ 2022; V.T.- round groups victories; T.D. – touches made; T.P.- touches received; V.E.D. - direct elimination victories; R. - result in competitions; C1 - first competition; C1- N. J. 2021; C2 - C. N. J. 2022 ; * At the National Championship 2022, athlete B.A-M. was withdrawn from competition for medical reasons.

In table no. 4 are listed the results obtained in the two competitions of the National Junior Championship of 2021 and 2022. The analysis of the performance level highlights, in the final testing (C2), the increase of the number of round group victories by 0.05, the increase of the number of made touches by 0.61, the diminution of the received touches by 1.82. As for the direct elimination victories, it can be noticed an increase of the number of given touches by 5.7, the decrease of the received touches by 1.3 at direct elimination victories and the improvement by 0.34 of the place in the competition ranking.

Currently, the biomechanics of the performance in fencing has been investigated regarding different components of the offensive and defensive moves (Chen et al., 2017; Adesida & McGregor, 2019). The results of a study highlight that the training, aimed at increasing the strength and the power of rear knee extension, is important for increasing the speed of the lunge. Also, increasing the extension of the rear knee during the lunge decreases at the same time the flection of the front knee, which has a positive influence on the execution of the lunge (Guan et al., 2018).

The procedures involved measurements of the reaction time and of the response time to different stimuli (Harmenberg et al., 1991; Sorel et al., 2019). The bioinformatics approach, the relations between reaction time, movement time and accuracy provide an account of the processes of movement programming and control and of the strategies implemented (Iglesias & Rodríguez, 2008). One of the main techniques is the lunge: an extension explosive of the fencer's body propelled by the non-dominant leg while the leading leg is pushed (thrown) forward (Moore, Chow & Chow, 2015).

The differences between the selected anthropometric parameters, the strength-endurance and the functional characteristics of the fencing between the elite and sub-elite groups were investigated. Selected structural correlations of elite fencers' performance were also made between: (a) selected anthropometric, flexibility and strength-endurance parameters and (b) fencing functional tests specific to lower limbs (Tsolakis & Vagenas, 2010; Tsolakis, Kostaki & Vagenas, 2010).

Given the progress in the scientific observation methods and the relying on objective judgement, researchers have agreed upon the need to diagnose the errors and to evaluate the technical performance (Athab, Hussein & Ali, 2019).

The effects of the physical fitness and sports experience on the performance of the fencers have been examined. Fencing experience and fitness facilitate the ability of a person to deal with the action when necessary (Chan et al., 2011). The anthropometric characteristics of the fencers reveal a typical asymmetry of the limbs generating a functional asymmetry that highlight the very high level of

specific function, strength and control required by this sport (Roi & Bianchedi, 2008; Witkowski et al., 2020).

Until now, the fencing endurance has been tested by non-specific ergometer tests, even though the movement patterns during fencing are considerably different. A study was conducted to evaluate a new endurance test specific to fencing. Two studies were made: fencing-specific endurance test (FET) with fencing specific footwork and incremental tests on cycle (CE) and treadmill ergometer (TM) in a random order. Afterwards fencing bouts (BOU) were conducted to determine specific physical load (Weichenberger, Liu, & Steinacker, 2012).

The study of transfer training shows that bilateral transfer can be efficient in fencing preparation, although its positive effects are short-term ones. To be efficient, the transfer training should be used as a regular training tool (Witkowski et al., 2020).

4. Conclusions

The content of the means of the physical training in junior athletes aged 15-18 was used for developing the agility, speed of execution, long attack, endurance, balance and tempo.

The results of the study highlight an improved development of the lower limbs muscle strength and abdominal strength with significant differences at $p<0.05$ and $p<0.01$; improvement of the technical execution by increasing the number of accuracy hits ($p< 0.01$); improvement of the jump-lunge (Balestra move) ($p< 0,01$).

The results of the technical and tactical training in competitions point out: the increase of the number of executions with direct attacks, compound attacks in competitions in the groups phase, in direct eliminations and in total.

Regarding the performance level, even after the withdrawal of a sportswoman from the competition, there is an improvement of the number of round group victories and given touches. The number of received touches is reduced while the number of the given touches is higher. Therefore, the ranking average in competitions is better.

Bibliography

1. Adesida, Y., Papi, E., & McGregor, A. H. (2019). *Exploring the role of wearable technology in sport kinematics and kinetics: A systematic review*. Sensors, 19(7), 1597.
2. Athab, N. A., Hussein, W. R., & Ali, A. A. M. (2019). *A Comparative Study for Movement of Sword Fencing Stabbed According to the Technical Programming in the Game of Fencing Wheelchairs Class B*. Indian Journal of Public Health, 10(5), 1345.
3. Chan, J. S., Wong, A. C., Liu, Y., Yu, J., & Yan, J. H. (2011). *Fencing expertise and physical fitness enhance action inhibition*. Psychology of Sport and Exercise, 12(5), 509-514.

4. Chen, T. L. W., Wong, D. W. C., Wang, Y., Ren, S., Yan, F., & Zhang, M. (2017). *Biomechanics of fencing sport: A scoping review*. PloS one, 12(2), e0171578.
5. Guan, Y., Guo, L., Wu, N., Zhang, L., & Warburton, D. E. (2018). *Biomechanical insights into the determinants of speed in the fencing lunge*. European journal of sport science, 18(2), 201-208.
6. Harmenberg, J., Ceci, R., Barvestad, P., Hjerpe, K., & Nyström, J. (1991). *Comparison of different tests of fencing performance*. International journal of sports medicine, 12(06), 573-576.
7. Iglesias, X., & Rodríguez, F. A. (2008). *Physiological testing and bioenergetics in fencing*. In Book Of Abstracts (p. 32).
8. Moore, K. C., Chow, F. M., & Chow, J. Y. (2015). *Novel lunge biomechanics in modern Sabre fencing*. Procedia engineering, 112, 473-478.
9. Murad, M. H., Asi, N., Alsawas, M., & Alahdab, F. (2016). *New evidence pyramid*. BMJ Evidence-Based Medicine, 21(4), 125-127.
10. Pavel, L. P., Pavel, A. V., Bratu, I., & Gherman, S. (2020). *Studiu privind influența mijloacelor specifice asupra nivelului pregătirii tehnico-tactice şi fizice la scrimerii spadasini de 10–12 ani*. In Sport. Olimpism. Sănătate (pp. 351-359).
11. Pavel, L. P., Potop, V., & Jurat, V. (2021). *Individualizarea în antrenamentul de scrimă (arma floretă).* In Sport. Olimpism. Sănătate (pp. 169-175).
12. Roi, G. S., & Bianchedi, D. (2008). *The science of fencing: implications for performance and injury prevention*. Sports medicine, 38, 465-481.
13. Sorel, A., Plantard, P., Bideau, N., & Pontonnier, C. (2019). *Studying fencing lunge accuracy and response time in uncertain conditions with an innovative simulator*. Plos One, 14(7), e0218959.
14. Tsolakis, C., & Vagenas, G. (2010). *Anthropometric, physiological and performance characteristics of elite and sub-elite fencers*. Journal of human kinetics, 23(1), 89-95.
15. Tsolakis, C., Kostaki, E., & Vagenas, G. (2010). *Anthropometric, flexibility, strength-power, and sport-specific correlates in elite fencing*. Perceptual and motor skills, 110(3_suppl), 1015-1028.
16. Weichenberger, M., Liu, Y., & Steinacker, J. M. (2012). A test for determining endurance capacity in fencers. International journal of sports medicine, 33(01), 48-52.
17. Witkowski, M., Bojkowski, Ł., Karpowicz, K., Konieczny, M., Bronikowski, M., & Tomczak, M. (2020). *Effectiveness and durability of transfer training in fencing.* International Journal of Environmental Research and Public Health, 17(3), 849.
18. Witkowski, M., Bronikowski, M., Nowik, A., Tomczak, M., Strugarek, J., & Króliczak, G. (2018). *Evaluation of the effectiveness of a transfer (interhemispheric) training program in the early stages of fencing training*. J.

Sports Med. Phys. Fit, 58, 1368-1374.
19. Witkowski, M., Tomczak, M., Karpowicz, K., Solnik, S., & Przybyla, A. (2020). *Effects of fencing training on motor performance and asymmetry vary with handedness*. Journal of motor behavior, 52(1), 50-57.

THE INITIAL DEGREE OF PHYSICAL FITNESS OF MIDDLE-AGED SCHOOLCHILDREN ENGAGED IN SWIMMING

Bukharbekov B.B., Phd Iosifov R.I.,

Vasil Levski National Sports Academy, Sofia, Bulgaria

Abstract

The article defines the theoretical aspects of physical fitness and physical development of middle-aged schoolchildren engaged in swimming. Among them are highlighted. At the age of 11-13, relatively large differences in the values of length, body weight and breast perimeter are typical for girls, while from the age of 14 these differences are observed in males. A significant difference was found in only two values: the fat layer and the equilibrium value. The nature and volume of realized loads in the mechanism of preparation for fights at this age should not be different. The dominant feature of the organization of swimming training in fins is not only the creation of knowledge, skills and abilities, but also the formation of creative competencies that can awaken the desire of the younger generation not only to achieve high achievements in sports, but also to take care of their health. At 10-12 years of age, girls and at 12-14 years of age, boys have a relatively increased body weight and with it the maximum strength increases, which increased at a small rate until 10-11 years of age in girls 12 years of age in boys. The initial level of physical fitness of middle-aged schoolchildren engaged in swimming is determined, characterized by the following. Relatively better results for boys compared to girls on the 3x5 m shuttle run test. In the long jump from the spot, the boys were relatively ahead of the girls. In lifting the torso from the prone position, the results of boys and girls corresponded to the rating of "4". In jumping rope, the achievements of boys and girls also corresponded to the rating of "4".

Keywords: *initial, level, physical fitness, schoolchildren, middle age, classes, swimming*

Introduction

Specialists often touch upon the problem of controlling the level of physical fitness of schoolchildren. Research data in this direction indicate a decrease in the level of physical fitness of children and adolescents. A large number of schoolchildren show an insufficient level of physical fitness and experience certain difficulties in meeting the regulatory requirements for different age groups that are used in the Physical Education Program for schoolchildren.

Among the many reasons that led to such results, both the low efficiency of the organization and methods of conducting physical education classes, and the insufficient number of active physical exercises are called. According to experts, it will take quite a lot of time and material costs to change the current situation in the school physical education system. The most positive way out of their current situation is to use the positive experience of children's and youth schools in various sports. Children who, along with studying at a comprehensive school, additionally begin to engage in one of the sports, make up a significant part of all children and adolescents. It is necessary to establish, by the example of studying the

development of the body of children and adolescents engaged in swimming, how active classes in this sport contribute to solving the tasks set.

The **purpose** of the study is to determine the initial level of physical fitness of middle–aged schoolchildren engaged in swimming.

Research objectives. 1. To determine the theoretical aspects of physical fitness and physical development of middle-aged schoolchildren engaged in swimming.

2. To study the initial physical fitness of middle-aged schoolchildren engaged in swimming.

Methods and organization of research. The study was conducted on the basis of the Vasil Levski National Sports Academy, Sofia, Bulgaria. The following research methods were used. The first task of the study was solved by means of methods of analysis of scientific and methodological literature [7], content analysis [2]. In the implementation of the second task of our study, the control test method was used [4]. To evaluate the results we obtained, we used recommendations from the source [5].

The results of the study and their discussion.

The analysis of scientific and methodological literature revealed the following theoretical aspects of our problem.

I.A. Kustova [6] notes that the implementation of the technology of aquatics, along with exercises on land, helps to significantly improve the degree of physical fitness and health, activates high performance in girls. In her opinion, through aquatics, a greater motor density is achieved, a greater intensity of classes. All this leads to significant positive improvements in physical development, physical fitness, and the degree of health compared to the usual forms of classes offered by the curriculum of universities in physical education.

N.J. Bulgakova, I.V. Chebotareva [1] emphasized the analysis of physical development and motor fitness of swimmers and schoolchildren aged 11-16 who are not engaged in sports swimming. The total size of swimmers of both sexes is higher than that of their peers who do not play sports. It should be noted that at the age of 11-13, relatively large differences in the values of length, body weight and breast perimeter are typical for girls, while from the age of 14 these differences are observed in males. The reason for this is the more onset of puberty in boys relative to girls. The dynamics of body weight gain and sternum girth in schoolboys, as well as body height, is characterized by two peaks at 12-13 and 15-16 years, while large increases in these data were recorded at 15-16 years. In swimmers, the dynamics of body weight gain and sternum girth were equal. They have the greatest simple body weights at the age of 13-14 years, and the girth of the sternum - at 14-15 years.

E.A. Tabakova [10] justified the normative assessment of physical development and physical fitness of swimmers and schoolchildren aged 12-16. At the age of 12 to 16 years, an increase in all data was found. The absolute values of

body height in swimmers vary from about 151 cm at 12 years old to 181 cm at 16 years old. A relatively large proportion of the average deviation of these data indicates that this indicator may be higher for individual students. The body height of swimmers increases to 30 cm over the entire period . In schoolchildren at this age, along with this, an increase in body growth is realized, but at each individual age stage, these absolute values are greater in swimmers. In some years, the differences in these body growth indicators are no more than 3-5 cm. By the age of 14, this difference between swimmers and schoolchildren has a maximum indicator, decreasing by the age of 15.

S.M.Semenova, D.A.Lavrentieva [8] emphasized the specifics of physical development and physical fitness in girls and boys aged 11-12 years engaged in swimming. According to the results of the experiment, a significant difference was found in only two values: the fat layer and the equilibrium value. Therefore, the author believes that the nature and volume of realized loads in the mechanism of preparation for fights at this age should not be different. Effectively, when implementing the training mechanism of young swimmers of this age group, it is necessary to organize it for both sexes relatively equally, since no strong differences were found according to physical fitness and physical development.

P.P. Dudchenko, O.A.Khokhlova [3] argued the data of physical fitness of swimmers in fins of secondary school age. The modern structure of activities with children of secondary school age in swimming in fins is characterized by a large number of various tools that directly affect the improvement of motor qualities and bodily development. The optimality of activity also depends on the genetic properties and physical abilities of schoolchildren. The dominant feature of the organization of swimming training in fins is not only the creation of knowledge, skills and abilities, but also the formation of creative competencies that can awaken the desire of the younger generation not only to achieve high achievements in sports, but also to take care of their health.

S.A.Seredkina [9] argued for the formation of the basic motor abilities of young swimmers, taking into account the peculiarities of the sensitive period. At 10-12 years of age, girls and at 12-14 years of age, boys have a relatively increased body weight and with it the maximum strength increases, which increased at a small rate until 10-11 years of age in girls 12 years of age in boys. The increase in strength occurs due to the development of muscle contractions control. Overall strength endurance in 10-12 years for girls and 10-14 years for boys increases sharply due to the economization of energy consumption. Special strength endurance in girls 10-12 years old and boys 12-14 years old increases due to the functional block.

SoltaniP., FigueiredoP., FernandesRJ., Vilas-BoasJP [11] studied the effect of the intensity of the game on the patterns of activity of the muscles of the upper extremities during swimming. Twenty participants recorded the work of the biceps muscle of the shoulder, the triceps muscle of the shoulder, the widest muscle of the

back, the upper part of the trapezius muscle and the muscle that straightens the spine. Normal and fast swimming speed was recorded. The average muscle activity differed between normal and fast swimming for all techniques except the broadest back muscles. It was revealed that previous physical activity and existing sports experience have no effect on the correction of muscle activity between normal and fast swimming.

SoltaniP., FigueiredoP., RibeiroJ., FernandesRJ., Vilas-BoasJP. [12] studied the effects of gender and previous experience on the contribution of aerobic and anaerobic energy structures, as well as activity profiles of 40 participants engaged in swimming. Oxygen consumption was recorded and blood lactate was assessed after each swimming session. The active and inactive phases of swimming were studied. It was revealed that the physiological parameters did not differ between the studied groups. The more experienced participants had increased values of heart rate.

GonzalezYA., Inertia AV., BarrizonteEAR, DiazRR [13] studied games for the development of basic motor abilities in swimmers 6-7 years old. The study was conducted for 6 months (in the third period of the educational process) to analyze the impact of designing activities through swimming on indicators characterizing basic motor abilities. As a result of this study, the hypothesis was confirmed that when learning to swim, the basic motor skills of swimmers aged 6-7 years are optimized.

Table 1 presents data on the initial degree of physical fitness of boys and girls aged 11-13 years engaged in swimming.

Table 1 – *The initial level of physical fitness of schoolchildren aged 11-13 years engaged in swimming*

n/a	Control tests	boys		gilrs	
		$\overline{X}$	mark	$\overline{X}$	mark
1	Shuttle run 3x5 m	5,9	4	6,9	3
2	Flexion- extension of the arms in the prone position (girls) number	-	-	12,8	4
3	Pull-up from vis (boys) qty	3,4	3	-	-
4	Long jump from a place, cm	165, 4	4	148,9	3
5	Lifting the torso from the prone position, qty	45,6	4	42,1	4
6	Jumping rope in 25 seconds, qty	50,2	4	56,3	4

As can be seen from Table 1, boys showed relatively better results compared to girls on the 3x5 m shuttle run test (5.9 seconds versus 6.9 seconds, which corresponds to the estimates of "4" and "3", respectively). The girls performed the "flexion-extension of the arms in the prone position" test 12.8 times (score "4"). In the vis pull-up test, the boys pulled up 3.4 times (score "3"). In the long jump from

a standing position, boys were relatively ahead of girls (165.4 cm versus 148.9 cm, which was adequate to the estimates of "4" and "3"). In lifting the torso from the prone position, the results of boys and girls corresponded to the score of "4" (45.6 and 42.1 times). In jumping rope, the achievements of boys and girls also corresponded to the rating of "4" (50.2 and 56.3 times, respectively).

Conclusions

1. The following can be attributed to the theoretical aspects of physical fitness and physical development of middle-aged schoolchildren engaged in swimming. At the age of 11-13, relatively large differences in the values of length, body weight and breast perimeter are typical for girls, while from the age of 14 these differences are observed in males. A significant difference was found in only two values: the fat layer and the equilibrium value. The nature and volume of realized loads in the mechanism of preparation for fights at this age should not be different. The dominant feature of the organization of swimming training in fins is not only the creation of knowledge, skills and abilities, but also the formation of creative competencies that can awaken the desire of the younger generation not only to achieve high achievements in sports, but also to take care of their health. At 10-12 years of age, girls and at 12-14 years of age, boys have a relatively increased body weight and with it the maximum strength increases, which increased at a small rate until 10-11 years of age in girls 12 years of age in boys.

2. The initial level of physical fitness of middle-aged schoolchildren engaged in swimming is characterized by the following. Relatively better results for boys compared to girls on the 3x5 m shuttle run test. In the long jump from the spot, the boys were relatively ahead of the girls. In lifting the torso from the prone position, the results of boys and girls corresponded to the rating of "4". In jumping rope, the achievements of boys and girls also corresponded to the rating of "4".

Bibliography

1. Bulgakova N.Zh., Chebotareva I.V. (2009). Assessment of physical development and motor fitness of swimmers and schoolchildren aged 11-16 who are not engaged in sports swimming. Theory and practice of physical culture.
2. Vershlovsky S.G., Matyushkina M.D. (2006). Content analysis in pedagogical research// Textbook: School of a young researcher. - St. Petersburg.
3. Dudchenko P.P., Khokhlova O.A. (2021). Indicators of physical fitness of swimmers in fins of secondary school age // Modern problems of science and education, 6, https://science-education.ru/ru/article/view?id=31315 (accessed: 03/21/2022).
4. Zheleznyak Yu.D., Petrov P.K. (2002). Fundamentals of scientific and methodological activity in physical culture and sports / Textbook for students. higher. studies. institutions. – M.: Publishing center "Academy".

5. Control and transfer standards for swimming for the training stage of 2 years of training https://multiurok.ru/files/kontrolno-perevodnye-normativy-po-plavaniiu-dlia-1.html
6. Kustova I.A. (1998). Increasing the level of physical fitness of girls aged 16-20 through aquatics classes: abstract. dis....Candidate of Pedagogical Sciences. - 13.00.04. – Moscow, 1998.
7. Sabitov R.A. (2002). Fundamentals of scientific research// Study guide. - Chelyabinsk State University. Chelyabinsk. http://www.dissers.ru/metodicheskie-ukazaniya/a4.php
8. Semenova S.M. (2016). Features of physical development and physical fitness in girls and boys aged 11-12 years engaged in swimming // Scientific notes of the P.F. Lesgaft University. https://cyberleninka.ru/article/n/osobennosti-fizicheskogo-razvitiya-i-fizicheskoy-podgotovlennosti-u-devochek-i-malchikov-11-12-let-zanimayuschihsya-plavaniem
9. Seredkina S.A. Formation of the basic motor abilities of young swimmers taking into account the peculiarities of the sensitive period https://scienceforum.ru/2013/article/2013008374
10. Tabakova E.A. (2002). Normative assessment of physical development and physical fitness of swimmers and schoolchildren aged 12-16: abstract.dis....Candidate of Pedagogical Sciences. - 13.00.04 : Moscow.
11. Soltani P., Figueiredo P., Fernandes RJ., Vilas-Boas JP. Muscle activation behavior in a swimming exergame: Differences by experience and gaming velocity//Physiology & behavior, 181, pp.23-28.
12. SoltaniP., Figueiredo P., Ribeiro J., Fernandes RJ., Vilas-Boas JP (2017). Physiological demands of a swimming-based video game: Influence of gender, swimming background, and exergame experience. Scientific reports, 7. Article No 5247.
13. Gonzalez YA., Inerarity AV., Barrizonte EAR, Diaz RR. (2020). Games to develop the basic motive abilities in the swimmers of 6-7 years // Revistaconrado, 16(77), 162-171.

IMPROVEMENT OF COMMUNICATION BY LEARNING THE TECHNICAL-TACTICAL PROCEDURES SPECIFIC TO DIFFERENT POSITIONS IN THE GAME OF FOOTBALL IN 8 - 9-YEAR-OLD CHILDREN

Oprea Bogdan[1], Fleancu Julien Leonard[2], Potop Vladimir[3],

[1]School Sports Club no 1 of Bucharest; PhD student at the University of Pitesti
[2] Department of Physical Education and Sport, University of Pitesti, Romania
[3]University of Pitesti; State University of Physical Education and Sport, Republic of Moldova; Ecological University of Bucharest, Romania

Abstract

Verbal and especially non-verbal communication between the football players is a very important factor in managing the phases of the game with a significant impact on team performance. At the age of 9, it is necessary to acquire as many basic skills as possible related to the game of football, namely the 5+1 mini football game specific to this age. Learning a single playing position out of the 6 can have negative effects on communication because the player considers the football game only in terms of the respective position, he plays without knowing the other positions and the aspects associated to these ones. The study is meant to improve the communication by learning the technical –tactical football actions specific to different playing positions in the 8-9-year-old children. For this purpose, a study was conducted within the School Sports Club no 1 in Bucharest over 3 months (January - March 2021), with a group formed of 20 children (advanced) who have trained for 2 years. The aim was to learn the following positions by rotating them in each training game: goalkeeper, central defender, right/central/left midfielder and forward. The technical-tactical actions specific to each position were monitored. Awareness of the game from several points of view related to the playing positions improved the overall picture that children had about the football game and also improved children's relationship with their teammates. The indicators could be the low number of communication conflicts within the team, as the players began to better understand each other. In conclusion, the rotation of positions led to the improvement of the communication between players, their performance on the field, the awareness of the various roles they have on the field and the technical-tactical dynamics. Also, the involvement of the players increased as shown by their attention during the game.

Key words: *communication, playing positions, technical-tactical actions, performance*

1. Introduction

Verbal and especially non-verbal communication between the football players is a very important factor in managing the game phases; it has a strong impact on team performance. Team members use intra-team communication to exchange information during matches to optimize performance (McLean et al., 2021). Sports psychologists stated that athlete's body posture, body movement, eye contact and clothes are forms of non-verbal behavior (Greenlees et al., 2005). The game involves participants in an activity by means of non-verbal emotional

expressions. Two teams use expressive gestures in order to compete (Rinman et al., 2004).

A football game has four play phases, namely: attack phase; defense phase; transition from defense to attack; transition from attack to defense (Šetić, Kolenović–Đapo & Talović, 2017). In most research studies, players are classified into four groups: forwards/attackers, midfielders, defenders and goalkeepers. Players in different team positions have a different load during the game (Nilsson & Cardinale, 2015).

In recent years, football success has proven to be highly dependent on various physical, technical, tactical and psychological factors. In this sense it was analyzed if the speed, agility, aerobic and anaerobic capacities of football players changed according to their playing positions (Bujnovsky et al., 2019).

At the age of 9, it is necessary to acquire as many basic skills of football game as possible. The 5+1 mini-football game is specific to this age. Learning just one playing position out of the six can have negative effects in terms of communication. The player considers the football game only from the point of view of the position in which he plays; he does not know the other positions and their characteristics. As the player is not familiar with the other positions, his ability to understand the game is limited. When the athlete knows and faces all the demands of different playing positions, he improves his cognitive-affective aspects.

It is important for each player at this age to know all these aspects of the game in order to improve the verbal and non-verbal communication on the field and implicitly the dynamics of the game. An athlete who plays in all positions and knows the technical-tactical actions can better understand his teammates, becomes aware of the game at a higher level and offers solutions for the arising situations.

The purpose of the study is to improve the communication by learning the technical-tactical actions specific to different playing positions in football game in 8-9 years old children.

2. Material and method

The study was based on the rotation of the players in different positions during the training sessions for a period of 3 months. The purpose was to improve the communication and performance during the football game. Subjects of the study were 20 children – football players.

The aim was raising awareness of the game after understanding all the playing positions and the aspects involved.

Description of the technical-tactical actions of each position:

Goalkeeper - *Besides the technical-tactical actions specific to this position*:

- He must be able to give useful short and long passes to the teammates, depending on the game situation, using the hand and the foot too. Because the goalkeeper has good footwork, he can contribute to constructive phases;
- He must anticipate the game and intervene, using his foot, behind the defender,

as a libero(sweeper);
- He must be able to take over the ball safely.

Defender: *able to perform an efficient marking*
- To be able to tackle the opponents;
- To close the passing corridors;
- To be able to intervene as a double;
- To participate in the game of construction through short and long passes;
- To participate actively in the pressing game;
- To shoot efficiently;
- To take over the ball efficiently;
- To head the ball correctly.

Central midfielder: *Aspects related to dribbling the opponent*
- To identify the free teammates and the passing lanes for the ball in play; to pass efficiently;
- To be able to play rapidly in small spaces, identifying the free teammates before receiving the ball;
- To be able to shoot on goal efficiently, to complete the attacks;
- To be able to tackle and to perform an effective marking;
- To double his teammates in all the zones, according to the game phases;
- To identify the possible passing lanes in order to get away from a marker efficiently;
- Effective pressing;
- To take over the ball correctly;
- To head the ball properly.

Side midfielder (left and right): *Efficient dribbling*
- To be able to kick the ball from the side towards the central corridor as well as possible;
- To double his teammates in defense; to tackle efficiently;
- To get away from a marker rapidly on the corridor;
- To shoot, to complete the attacking actions;
- Fast and correct passing play;
- To identify the pressing situations and to help his teammates;
- Effective play of marking and tackling.

Forward: *Fast getting away from a marker in the free areas, dribbling*
- To help his team in defense, by positioning;
- To efficiently press the opponent;
- To shoot efficiently;
- To complete the attacking actions;
- To take over the ball efficiently;
- To head the ball correctly.

3. Results and Discussions

The study monitored the learning of the playing positions with the following technical-tactical actions:

- Goalkeeper: positioning in the goal; defending the ball; putting the ball back into play;
- Central defender: tackling, passing, positioning in the field to cover the attacking corridors of the opponents, marking, positioning aspects specific to this position;
- Left/center/right midfielder – driving the ball, passing, dribbling, centering, getting away from a marker, tackling, shot on goal, positioning aspects specific to this position;
- Forward - getting away from a marker, shot on goal, dribbling, driving the ball, recovering the ball, positioning aspects specific to this position.

Table 1 - *Aspects related to an efficient dribbling in the position of side midfielder (left)*

Play position / Th-Ta Act.	**Left Midfielder** * 1-i	Forward 2	Right midfield 3	Defender 4	Central midfielder 5	Left midfield 1-f	Mean; ±SD
Tackling	0	0	0	3	2	4	1.5; ±1.76
Pass intercepting	5	4	3	3	2	1	3.00; ±1.41
Successful passes	4	4	8	3	5	5	4.83; ±1.72
Failed passes	1	5	5	5	1	1	3.00; ±2.19
Mistakes (foul/hand)	0	0	0	0	0	2	0.33; ±0.82
Possession gaining	6	10	15	8	8	6	8.83; ±3.37
Shots on goal	0	0	0	0	2	0	0.33; ±0.82
Communication conflicts	0	0	0	0	0	0	0.00; ±0.00
Useful indications	0	0	2	2	0	0	0.67; ±1.03
Encouraging teammates	0	0	0	0	0	0	0.00; ±0.00

Table 2 - *Aspects related to an efficient dribbling in the position of side midfielder (right)*

Play position / Th-Ta Act.	**Right Midfiel*** 1-i	Defender 2	Central midfielder 3	Left midfield 4	Forward 5	Right midfield 1-f	Mean; ±SD
Tackling	2	4	3	0	0	1	1.67; ±1.63
Pass intercepting	7	8	4	7	1	8	5.83; ±2.78
Successful passes	8	7	4	6	4	5	5.67; ±1.63
Failed passes	0	2	3	1	5	1	2.00; ±1.79
Mistakes (foul/hand)	0	0	0	0	0	1	0.17; ±0.41
Possession gaining	10	9	9	8	10	8	9.00; ±0.89
Shots on goal	1	1	2	3	4	0	1.83; ±1.47
Communication conflicts	0	0	0	0	0	0	0.00; ±0.00
Useful indications	2	0	0	0	0	1	0.5; ±0.84
Encouraging teammates	0	2	0	0	0	0	0.33; ±0.82

Table 1 shows the actions related to an efficient dribbling in the position of side midfielder (left). A great involvement in the game is noticed in the position of right midfielder, who took part in a large number of actions. In general, they avoid negative actions (fouls/hands). This fact can be observed at the level of communication (avoids communication conflicts). Regarding the communication with teammates, a tendency to avoid conflicts can be noticed, even to the detriment of communication. They limit themselves to some useful indications, especially from the defender position, as they have a better perspective on the game. A relatively introverted player compared to others.

The attributes related to an efficient dribbling in the position of side midfielder (right) are listed in table 2. In terms of involvement in the game, it can be noticed that the right midfielder position is the most beneficial for stimulating the technical abilities of this player. This position is characterized by the avoidance of the negative actions; the same positive aspect is observed within communication as well. As for the communication with the teammates, there are no conflicts but not enough communication either. However, it is possible to observe the useful indications given to the teammates from the defender position due to the fact that the defenders are able to see the overall situation of the game.

Table 3 – *Aspects related to dribbling the opponent in the position of central midfielder*

Play position / Th-Ta Actions	**Centr Midf** * 1-i	Left midf 2	Forward 3	Right midf 4	Defender 5	Central midf 1-f	Mean; ±SD
Tackling	4	2	0	2	8	3	3.17; ±2.71
Pass intercepting	9	7	0	4	3	8	5.17; ±3.43
Successful passes	7	3	5	3	3	8	4.83; ±2.23
Failed passes	10	7	7	10	4	11	8.17; ±2.64
Mistakes (foul/hand)	0	0	0	1	1	0	0.33; ±0.52
Possession gaining	25	19	15	16	8	20	17.2; ±5.71
Shots on goal	6	7	2	2	1	5	3.83; ±2.48
Communication conflicts	5	5	4	7	1	2	4.00; ±2.19
Useful indications	1	2	1	2	2	1	1.5; ±0.55
Encouraging teammates	0	0	0	0	2	1	0.5; ±0.84

The results of the technical-tactical actions related to dribbling the opponent in central midfielder position are presented in table 3. There is a great involvement in actions in all the playing positions, except for the defenders, which helps to the development of their own game. The basic position of central midfielder has a strong impact on the game. There is a small number of mistakes, which is also a positive aspect. As for the ability and also quality of the communication, a large number of communication conflicts can be observed, but also an interesting number of useful indications. The encouragements are still quite few. Explanations and demonstrations at the level of communication conflicts were needed in the case of this player in order to improve the atmosphere within the team. The improvement of this aspect is shown in the last column. One can notice the lack of communication conflicts in the defender position but also the lower number of

actions attended. Also, the number of useful indications increased in the position of defender, as the game is carried out in front of him. It is quite clear that this player is a leader, but it is necessary that the communication conflicts are further dealt with, in order to reduce them and to improve the atmosphere in the group.

Table 4 – *Aspects of fast getting away from a marker, dribbling in the position of forward*

Play position / Th-Ta Actions	**Forward*** 1-i	Right midf 2	Defender 3	Central midf 4	Left midf 5	Forward 1-f	Mean; ±SD
Tackling	0	1	3	0	2	1	1.17; ±1.17
Pass intercepting	3	4	10	5	6	6	5.67; ±2.42
Successful passes	2	5	9	5	4	1	4.33; ±2.80
Failed passes	0	4	7	5	3	0	3.17; ±2.78
Mistakes (foul/hand)	2	0	0	0	0	0	0.33; ±0.82
Possession gaining	6	11	16	16	10	6	10.8; ±4.49
Shots on goal	3	1	0	4	2	3	2.17; ±1.47
Communication conflicts	0	0	1	0	0	0	0.17; ±0.41
Useful indications	0	0	2	0	1	0	0.5; ±0.84
Encouraging teammates	0	0	0	0	0	0	0.00; ±0.00

The aspects regarding the fast getting away from a marker in the free areas, dribbling in the position of forward, are shown in table 4. One can notice the participation in a large number of actions, especially as central midfielder but also as defender. These positions improve their involvement in the game, an objective for improving the game itself. The player was not much involved in the game in his basic position (defender). Regarding the ability to communicate, one can observe the avoidance of conflicts but also the small number of indications and encouragements. This player can improve these indices in terms of communication; he seems quite introverted.

Table 5 - *Aspects related to the technical-tactical actions in the position of defender*

Play position / Th-Ta action	**Defender** * 1-i	Central midf 2	Left midf 3	Forward 4	Right midf 5	Defender 1-f	Mean; ±SD
Tackling	4	4	2	3	2	4	3.17; ±0.98
Pass intercepting	8	7	2	0	1	14	5.33; ±5.35
Successful passes	2	2	1	4	6	11	4.33; ±3.72
Failed passes	6	3	2	3	5	2	3.5; ±1.64
Mistakes (foul/hand)	0	0	0	0	0	1	0.17; ±0.41
Possession gaining	8	7	4	12	11	14	9.33; ±3.67
Shots on goal	0	1	1	1	0	1	0.67; ±0.52
Communication conflicts	1	0	2	0	1	0	0.67; ±0.82
Useful indications	2	2	5	1	0	2	2.00; ±1.67
Encouraging teammates	0	0	0	0	0	0	0.00; ±0.00

Table 5 highlights the aspects related to the technical-tactical actions in the position of defender. His basic position of defender did not generate too many actions with the ball in the first phase. But in the case of this player, an important

improvement can be found out after performing the rotation in all positions. A much greater involvement in the game both offensively and defensively was noticed. There are some conflicts at communication level, but nothing worrisome. Many positive aspects can be observed in terms of useful indications for the teammates. The player tries to have a good picture of the game from any position and to help the teammates to make the best decisions. It can be seen quite clearly that this player too has leadership qualities within the team.

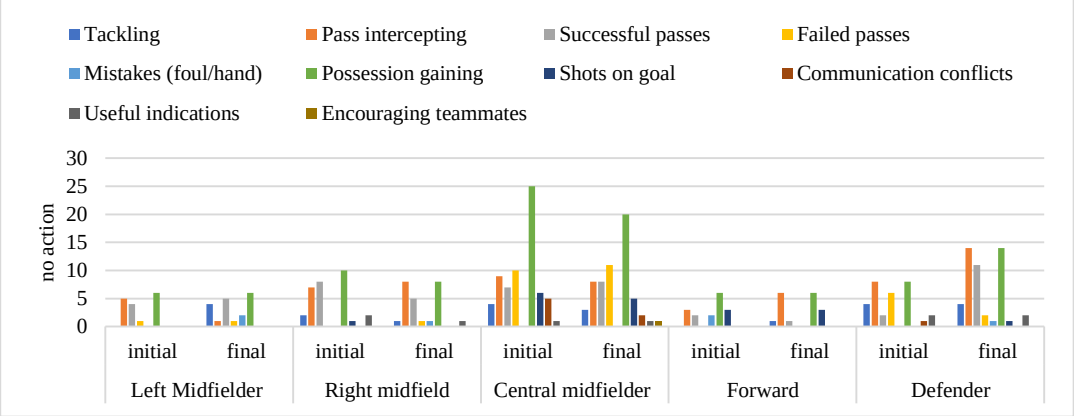


Fig. 1. *Results of the technical-tactical actions at the beginning and the end of the playing positions rotation*

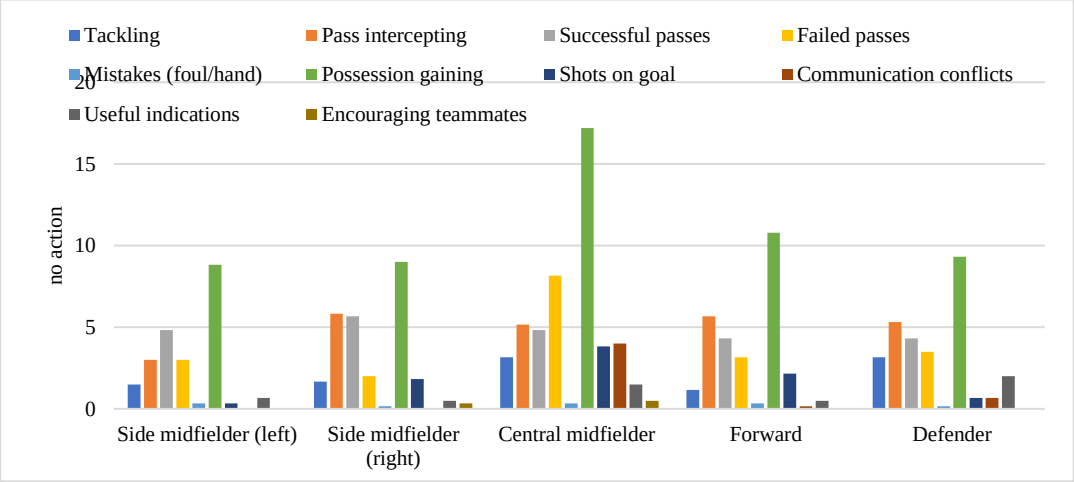


Fig. 2. *Results of the technical-tactical actions after the rotation of the playing positions*

At team level (fig. 1 and 2):

The rotation per playing positions generated complex situations for all the subjects of the study. Variations can be observed in all sectors and all players, variations that put them in new situations with the aim of improving their creativity, imagination and communication as well.

It can be observed that the defender position generated the most useful indications to teammates because the players in this position have the entire game in front of them; thus, they have a better view of the game than the other participants.

Another positive conclusion can be drawn from the fact that in the final match there is a diminution of the communication conflicts compared to the initial matches.

However, it can be observed that the situation is rather complicated in terms of encouraging the teammates; only 2 players encouraged their teammates. At this age it is important to educate children in this regard, so as to avoid individualism and improve the team spirit.

This study helps to identify both the more introverted players and the leaders. Thanks to the accurate data obtained, it is possible to know where to intervene at communication level and especially in which direction.

At the present moment there are studies that deal with a wider range of verbal and non-verbal behaviors than the ones previously reported in the specialized literature. These studies analyze the communication between parents and children in sport and its contribution to positive results in the development of the young athletes (Tamminen, Bissett, Azimi & Kim, 2022). Regarding the phenomenology of the communication behavior in football fans, this one was influenced by identity, attributes and action as a form of transmitting messages with language and certain symbols (Tiyanto, Pramono & Hartono, 2019). To evaluate the validity and reliability of the Scale of Technical-Tactical and Social Skills of Football Players it was checked whether this scale monitors the expected main phases of the football game and to what degree this scale correlates with the estimated self-efficacy (Šetić, Kolenović–Đapo & Talović, 2017). A preliminary investigation measured - by means of differential evaluations of the perceived effort - the effects of the playing positions and contextual factors on the match internal tasks of the elite football players (Barrett et al., 2018). Dynamic systems and didactic games were used to develop the decision-making process and the abilities in the high expertise players aged from 6-7 to 13-14. In the evolution of knowledge from attack to defense, significant differences were found out and demonstrated in the attack phase: the progress towards the goal tactical principle and the shaking off. As for the defense: marking and cover (off-ball defenders); analysis of the effect of an intervention program, based on non-linear pedagogy, decision-making and execution of different actions; analysis of the football players' tactical behavior in real-game situations across the different stages of development (González-Víllora et al., 2015; Pizarro et al., 2019; Sevil Serrano et al., 2017).

If he knows all the playing positions, the football player is able to give advice to the teammates who are not paying attention to the position, he can better anticipate the game phases and increase therefore his personal performance and the team performance as well.

4. Conclusions

The awareness of the game from several points of view specific to playing positions has improved the overall picture that the players had on the football game and also improved the relationship with the teammates. The possible indicators to be taken into consideration are the reduced number of communication conflicts within the team due to the fact that the players understand each other better.

Thus, as a result of the rotation / change of playing positions, the following elements improved considerably: the communication between players, their performance on the playing field, the level of awareness of the various roles that the players have on the field and a better performance thanks to the improved technical-tactical dynamics. The involvement of the players increased as a result of the higher attention they gave to the game.

Bibliography

1. Tamminen, K. A., Bissett, J. E., Azimi, S., & Kim, J. (2022). Parent and child car-ride interactions before and after sport competitions and practices: Video analysis of verbal and non-verbal communication. *Psychology of Sport and Exercise*, 58, 102095.
2. McLean, S., Salmon, P. M., Gorman, A. D., Dodd, K., & Solomon, C. (2021). The communication and passing contributions of playing positions in a professional soccer team. *Journal of Human Kinetics*, 77(1), 223-234.
3. Greenlees, I., Bradley, A., Holder, T., & Thelwell, R. (2005). The impact of opponents' non-verbal behavior on the first impressions and outcome expectations of table-tennis players. *Psychology of Sport and Exercise*, 6(1), 103-115.
4. Rinman, M. L., Friberg, A., Bendiksen, B., Cirotteau, D., Dahl, S., Kjellmo, I., ... & Camurri, A. (2004). Ghost in the cave–An interactive collaborative game using non-verbal communication. In *Gesture-Based Communication in Human-Computer Interaction: 5th International Gesture Workshop*, GW 2003, Genova, Italy, April 15-17, 2003, Selected Revised Papers 5 (pp. 549-556). Springer Berlin Heidelberg.
5. Tiyanto, R., Pramono, H., & Hartono, M. (2019). Phenomenology of Communication Behavior of Football Supporters in Giving Support in Brebes Regency, Central Java, Indonesia. *International Journal of Sport Culture and Science*, *7*(1), 31-40.
6. Šetić, R., Kolenović–Đapo, J., & Talović, M. (2017). Validation study of the tactical-technical and social competencies of football players' scale. *Sportski logos*, 15 (28-29); 11-17.
7. Nilsson, J., & Cardinale, D. (2015). Aerobic and anaerobic test performance among elite male football players in different team positions. *LASE Journal of Sport Science*, 6(2), 73-92.

8. Bujnovsky, D., Maly, T., Ford, K. R., Sugimoto, D., Kunzmann, E., Hank, M., & Zahalka, F. (2019). Physical fitness characteristics of high-level youth football players: influence of playing position. *Sports*, 7(2), 46.
9. Barrett, S., McLaren, S., Spears, I., Ward, P., & Weston, M. (2018). The influence of playing position and contextual factors on soccer players' match differential ratings of perceived exertion: a preliminary investigation. *Sports*, 6(1), 13.
10. González-Víllora, S., García-López, L. M., & Contreras-Jordán, O. R. (2015). Decision making and skill development in youth football players. *Revista Internacional de Medicina y Ciencias de la Actividad Fisica y del Deporte*, 15(59).
11. Pizarro, D., Práxedes, A., Travassos, B., del Villar, F., & Moreno, A. (2019). The effects of a nonlinear pedagogy training program in the technical-tactical behaviour of youth futsal players. *International Journal of Sports Science & Coaching*, 14(1), 15-23.
12. Sevil Serrano, J., Praxedes Pizarro, A., García-González, L., Moreno Dominguez, A., & del Villar Álvarez, F. (2017). Evolution of tactical behavior of soccer players across their development. *International Journal of Performance Analysis in Sport*, 17(6), 885-901.

IMPORTANCE OF THE MEANS OF ADJUSTING THE PHYSICAL EFFORT PARAMETERS IN THE 8-10-YEAR-OLD FOOTBALL PLAYERS BASED ON THE CARDIOVASCULAR INDICES CHANGE

Timnea Andreea Consuela[1], Potop Vladimir[2], Timnea Olivia Carmen[3]

[1] *PhD student - State University of Physical Education and Sport, Chisinau, Republic of Moldova; Chiajna Medical Center, Ilfov, Romania*
[2] *University of Pitesti, Romania*
[3] *Romanian-American University, Bucharest, Romania*

Abstract

The aim of the study is to find the most efficient means to adjust the parameters of the physical effort in the football players aged 8 to 10 years according to the change of the cardiovascular indices. In this respect, a case study was organized for the specialists of football (coaches/teachers) from Romania and the Republic of Moldova. The research used the survey method according to the questionnaire developed in Google forms, consisting of 15 questions and transmitted online. The results of the sociological survey highlight the share of the training factors in different training periods of the football players aged 8-10, the time given to training and its components in various periods of preparation, also the content of the means used in the introductory part of the training session. There were identified the training mistakes that influence the most the recovery speed and/or the excessive training of the 8-10 years old football players. The weight of the cardiovascular indices used to adjust the physical effort parameters, the main influences of the football game on the physiological changes, the physiological indicators that determine the decrease of the game efficiency were also analyzed. The means and methods used to monitor and prevent the overtraining of the 8-10-year-old football players by adjusting the physical effort parameters in conformity with the changes of the cardiovascular indices led to an increased training efficiency. The implementation of a training plan based on the changes of the cardiovascular indices will contribute to the adjustment of the physical effort parameters in the 8-10-year-old football players.

Key words: *training, physiological indices, monitoring, prevention, recovery, overtraining*

1. Introduction

Physical activity can be efficient in all phases of the chronic disease management, starting from primary prevention (risk factors prevention) up to treatment and recovery (Sallis et al., 2012). The level of physical activity during the sports practice organized for youth differs substantially. In the case of the 7-14-year-old children, football is associated with more physical activity than the baseball/softball, for example (Leek et al., 2011; Bendiksen et al., 2014).

Although many works have been published on the functional dimensions and abilities in pre-adolescence and adolescence, less information is available for ages from 6 to 10. Studies on the young football player have been initiated in order to consider the potential impact of the variation in growth and biological maturity

state on the sport-specific football skills (Domingues, 2013). Physiological and hematological changes in athletes after training sessions and competitions have always been of interest to sports researchers. Moreover, the intensity, duration and type of exercise are factors that affect the performance of the athletes, along with the physiological and hematological changes of these ones (Ghahfarrokhi, Habibi & Nasab, 2019). In football, as in other sports, the achievement of sports performance is associated with certain morphological and functional changes. It should be noted that some morphological and functional indicators can be both hereditary and acquired (Lebediev et al., 2020). Optimal football training should allow, among other objectives, improvements of maximal oxygen uptake (VO2max) and of body mass index or BMI as well (Calandro et al., 2020). Overweight and obesity are important precursors of all altered functional elements of the cardiovascular risk profile (Lucini et al., 2013).

The purpose of the study is to find the most efficient means of adjusting the physical effort parameters in the 8-10-year-old football players based on cardiovascular indices changes.

2. Material and method

This scientific approach led to the organization of a case study addressed to the football specialists (coaches/teachers) from Romania and the Republic of Moldova. In this regard, the survey method was used, on the basis of a questionnaire developed in Google forms, including 15 questions and sent online.

The content of the questions is shown below:

- Weight of training factors in different periods of training;
- Training time and its parts in different training periods;
- Content of the means used in the parts of the training lesson;
- Training mistakes that most influence the recovery speed and/or overtraining;
- Weight of the cardiovascular indices used to adjust the physical effort parameters;
- main influences of football game on the physiological changes;
- physiological indicators that decrease the playing performance;
- use of means and methods for monitoring and preventing the overtraining;
- implementation of a training plan based on the change of the cardiovascular indices.

A number of 21 teacher-coaches participated in this study. Their average age is 40.19; ±8.96 years (age between 26-54 years), seniority in the field 14.95; ±8.21 years (2 – 29 years of experience).

The analysis of the responses was made using the KyPlot program, regarding the descriptive indices: mean; standard deviation (±SD), sum (∑) and range of values (min and max). Also, the weight of answers was calculated according to their total.

3. Results and Discussions

47.6% grade I teachers, with bachelor's degree. participated in this study: A (4.76%), B (14.3%) and C (9.5%). Following the questionnaire, the results of the answers were entered in table 1, and the analysis was graphically continued in figures 1-4.

Table 1 *Content of the questions in the questionnaire (n = 21)*

No.	Items (questions – content)	Answer (mean/%; SD)							
		a	**b**	**c**	**d**	**e**	**f**	**g**	**h**
1	Weight of training factors in the preparatory period (%)	30.7	32.0	40.7	21.4	23.1	28.8	26.3	25
2	Weight of training factors in the competitive period (%)	31.9	36.25	44.04	35	34.3	36.9	32.5	-
3	Time devoted to training in different training periods (min)	73.81; ±12.2	72.38; ±11.7	70.95; ±11.8	-	-	-	-	-
4	Time given to the training parts in the preparatory period (min)	11.95	11.6	28.6	6.6	-	-	-	-
5	Time given to the training parts in the competitive period (min)	11.9	12.4	27.95	7.5	-	-	-	-
6	Time given to the training parts in the transition period (min)	11.35	11.15	28.75	6.35	-	-	-	-
7	Content of the means of the training lesson introductive part (%)	38.09	76.2	47.6	47.6	57.1	47.6	33.3	-
8	Mistakes in training that can most influence the recovery speed and/or overtraining (grades)	3.62	4.43	4.33	4.47	-	-	-	-
9	Cardiovascular indices most frequently used in the adjustment of physical effort parameters (%)	57.1	76.2	4.76	-	-	-	-	-
10	Main influences determined by the football game on the physiological changes (grades)	3.47; ±1.28	3.67; ±1.15	4.43; ±0.67	3.67; ±1.11	-	-	-	-
11	Determining the game efficiency by the physiological indicators (grades)	3.81; ±0.93	4.00; ±0.89	3.81; ±0.93	3.52; ±0.87	-	-	-	-
12	Means and methods of monitoring and preventing the overload (%)	47.6	42.8	42.8	47.6	-	23.8	-	-
13	Use of stretching method in the training process (%)	61.9	14.3	52.4	19.05	19.05	57.1	-	-
14	Adjustment of physical effort parameters based on the cardiovascular indices (grades)	4.28	3.95	4.25	-	-	-	-	-

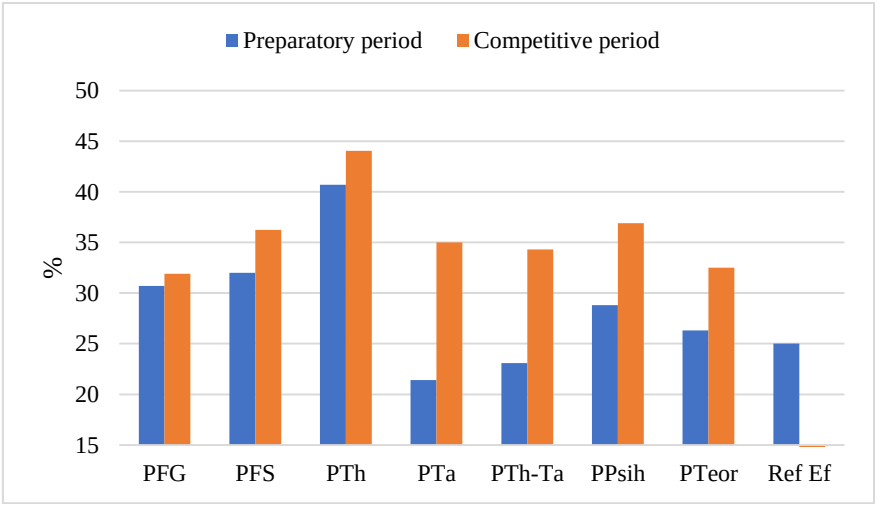


Figure 1. *Weight of training factors in the preparatory and competitive period*
Notes. PFG –General physical training; PFS –Special physical training; PTh – Technical training; PTa – Tactical training; PTh-Ta –Technical-tactical training; PPsih –Psychological training; PTeor –Theoretical training; Ref Ef – Recovery after physical effort

The analysis of the training factors during the preparatory period and the competitive one is shown in figure 1. The weight of factors in the preparatory period highlights 40.7% special attention paid to technical training (PTh), then 32% to specific physical training (PFS) and 30.7% to general physical training (PFG). Regarding the competitive period, the weight is distributed as follows: 44.04% - PTh, 36.9% - mental training, 36.25% - PFS and 35% - tactical training (PTa), where 23.8% of the participants answered in terms of weight of the overall training factors (100%), 28.6% under 100%, while 47.6% referred to each factor separately.

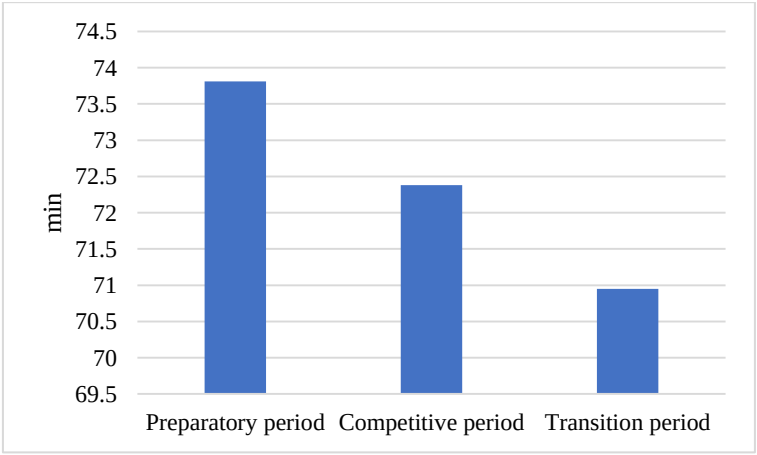


Figure 2. *Time devoted to training in different training periods*

Regarding the time devoted to training in different periods (fig. 2), the analysis of results highlights an average of 73.81; ±12.2 min in the preparatory period, 72.38; ±11.7 min in the competitive period and 70.95; ±11.8 min in the transition period.

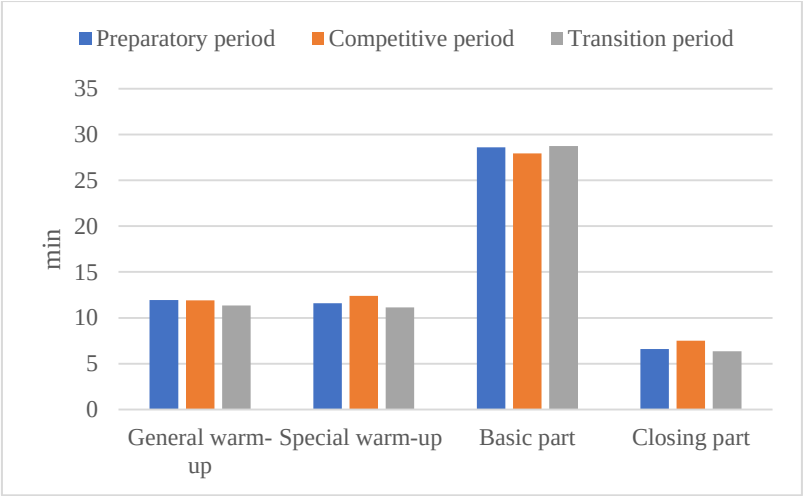


Figure 3. *Time given to the parts of training in different training periods*

As for the time granted to the parts of the training in different training periods (fig. 3), the results of the analysis show a longer duration of the general warm-up with an average of 11.95 min in the preparatory period, the special warm-up with an average of 12.6 min in the preparatory period; the basic part: 28.75 min in the transition period; the closing part: 7.5 min in the competitive period.

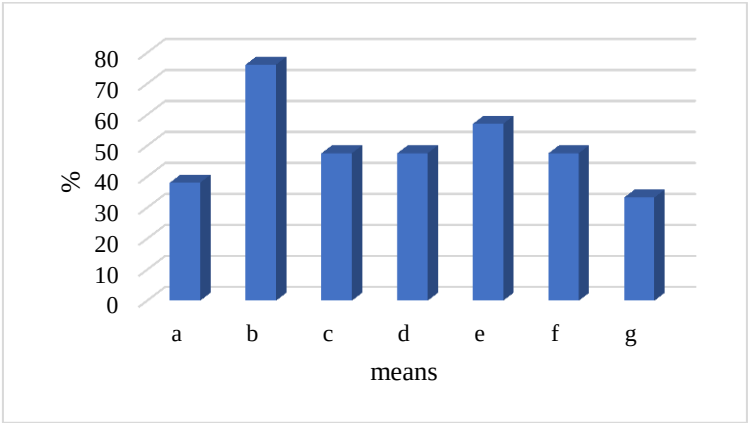


Figure 4. *Content of the means of the introductory part within the training lesson*
Notes. a) Walking and its variants; b) Running and its variants; c) Jumps; d) Balance both in its general forms and while controlling the ball; e) Exercises of general physical development; f) Stretching (mobility); g) Breathing exercises

Using the content of the means of the introductory part in the training lesson highlights 38.1% walking and its variants, 76.2% running and its variants, 47.6% jumps and balance, 57.1% exercises of general physical development, 47.6% stretching and 47.6% breathing exercises.

Training mistakes that can most influence the recovery speed and/or overtraining by: 61.9% big volume of high intensity stimuli (4.47 points), 57.1% demand higher than the capacity of the body (4.43 points), 61.9% sudden increase in the training load after long periods of rest (4.33 points) and 33.3% skipping the recovery (3.62 points).

The analysis of the cardiovascular indices most frequently used in the adjustment of the physical effort parameters shows the following values: 76.2% respiratory rate (RR), 57.1% heart rate (HR) and 4.7% blood pressure (BP).

The weight of the main influences determined by the football game on the physiological changes highlights the values: 52.4% character and methodology of training (4.43 points); 28.5% weather conditions (3.67 points); 28.5% ratio of forces and some aspects specific to certain players (3.81 points) and 23.8% the state of the field (3.47 points).

The results regarding the worsening of the most frequent physiological indicators that can control the game performance reveal: 52.4% frequent mistakes in placing on the field (4.43 points); 28.5% due to poor participation in the collective playing actions (3.67 points); 23.8% through mistakes in controlling the ball (3.81 points) and 23.8% through repeated avoidances of large actions (3.81).

As for the means and methods for monitoring and preventing the overload in training sessions, the following results are found out: 47.6% by observing the physical fitness of the players, expressed by their level of effectiveness in the training sessions; 42.8% by awareness of player's attitude during the training, appropriate relationships with the teammates; 42.8% by the health state of the player, monitored by the team physician and subjectively perceived by the player, indicating the speed of recovery; 47.6% by observing the indicators of the recovery state, by the wish of the athlete to play and surpass his personal performances etc.; 23.8% by measuring the morning resting heart rate. It was observed that no special attention was paid when recording the weight variations by +/- 1 kg (or >3%) in a period of 24 hours.

The use of the stretching method in the training process shows the following values: 61.9% it reduces muscle tension and helps to quickly integrate into the training purposes; 57.1% ensures the active pauses between effort and rest; 52.4% as means of preventing the tendon and ligament injuries or other muscle accidents ; 19.04% concentration of the attention during the stretching exercise helps to better understand the effects; 19.04% stimulates the blood circulation etc. and 14.3% ensures a better ball kicking technique.

The need to implement a training plan for adjusting the parameters of physical effort based on cardiovascular indices in the 8-10-year-old football players highlight: 85.7% - Yes, 4.76% - NO and 9.52% - I don't know.

The enjoyment and cohesion of the children participating in a high intensity physical activity (both individual one and team sports) in school have been investigated. Football is the most attractive sport for children, especially boys, who find it extremely enjoyable (Elbe et al., 2017). The authority of a coach-teacher plays an important role in the success of a young football player. For the young athletes, the coach-teacher becomes the ideal of a strong man who knows the basics of their favorite sport (Ilxomovich, 2022).

The musculoskeletal fitness in 8-10-year-olds practiced 3×40 min/week throughout the school year improves bone mineralization and several aspects of the muscular fitness (Larsen et al., 2017, 2018). A comparative analysis of a 6-week training program based on the Small Sided Games (SSG) for specific sport conditioning was made. It was found out that the periodized SSG training, by changing the field size and the number of players, had better effects on the technical and tactical components (Amani-Shalamzari et al., 2019). Players with a longer professional training seem to adopt a more balanced use of the lower limbs in order to cope with the previously developed musculoskeletal asymmetries and possibly reduce the risk of injury (Fousekis et al., 2010).

The courts (tennis or basketball ones), playgrounds and football fields were generally associated with higher energy expenditure than the baseball/softball fields, picnic areas and open spaces (Sallis et al., 2012).

A positive result would support the feasibility of introducing the non-invasive assessment of the autonomous cardiovascular regulation as a means of monitoring the beneficial effects of exercise and other interventions on the lifestyle of the school-age children (Lucini et al., 2013). The repeated sprints performed with changes of direction are an effective strategy for the development of physiological markers for team sports. Therefore, this strategy could be adopted as a training model to improve the performance of futsal players (Nascimento et al., 2015). Investigating the cardiac effects of a 10-week football training period for 9-10-year-old schoolchildren resulted in significant structural cardiac and functional adaptations in the preadolescent children (Bendiksen et al., 2014). The evaluation of the influence that various special football exercises has on the body of 10-12-year-old children shows that the heart rate and the energy increase with the increase in the number of players (Abdula & Lebedev, 2014).

Football is an intense endurance sport that has a positive relationship with the diminution of iron, ferritin and red blood cells levels (Ghahfarrokhi, Habibi & Nasab, 2019). It can be assumed that the amounts of biochemical parameters in the blood are the reflection of the training intensities applied in the microcycle of the week and reach their highest level after the football match (Jastrzebski, 2006).

The effectiveness of the intermittent training methodology, used throughout a 12-week period, in terms of improved VO2max and BMI values in the football players, demonstrated the importance of paying attention to the recovery phase. In this method, the recovery is of equal if not greater importance than the effort (Calandro et al., 2020).

Athletes who do not promptly report symptoms of a concussion and continue to participate in athletic activities are at risk of longer recovery than the athletes who report the symptoms immediately and are quickly removed from the activity (Asken et al., 2016). Head impact exposure of the youth population involved in football has not been investigated yet, although the number of young footballers is considerably higher. To minimize these most severe head impacts, the football practices for youth should be changed in order to eliminate the high-impact exercises that do not replicate game situations (Daniel et al., 2012).

If there was a link between the injury risk factors, the risk diminution and the results of the performance, this link may facilitate the adoption and sustained adherence to successful programs. No investigation has shown a connection between the balance improved by training for neuromuscular injuries prevention and the risk of injury (Steffen et al., 2013).

Although the weight and lean mass weight losses during the competitive season have been recovered in the offseason, modifications in college football programs would be beneficial in players. Such modifications include nutritional counseling, diet recommendations, weight monitoring and skinfold testing as an estimate of the body fat change (Binkley et Al., 2015). Investigating the responses to the metabolic and muscle damage after the Yo-Yo Intermittent Recovery Test level 1 (YYIRT) in the young football players confirms the greater metabolic demand of the aerobic and also anaerobic metabolism and reflects a significant mobilization of the purine cycle during YYIRT (Hammouda et al., 2013).

The evaluation of the effects of the speed, agility and quickness (SAQ) training method on the power performance in football player highlights that without a proper planning of SAQ training, football players will most likely experience a decline of power performance during the season (Jovanovic et al., 2011). The overtraining syndrome is a chronic condition that results from long periods of high-intensity or high-volume work, without periods of rest. Overtraining is associated with different physiological, psychological, immunological and functional symptoms. If not prevented, overtraining can keep the athlete away from sport for months (Varlet-Marie, et al., 2011).

4. Conclusions

Following the sociological study intended to find the most efficient ways to regulate the physical effort parameters in the 8-10-year-old football players based on the change in the cardiovascular indices, the conclusions listed below can be drawn:

- the analysis of training factors in the preparatory and competitive period

highlights 23.8% in terms of overall training factors weight;

- the time devoted to training in different training periods, depending on the maximum time given (90 min), shows an average of 82% in the preparatory period, 80.04% in the competitive period and 78.8% in the transition period;
- regarding the use of the means content of the training lesson introductory part, the following values are highlighted: 38.1% walking and its variants, 76.2% running and its variants, 47.6% jumps and balance, 57.1% exercises of general physical development, 47.6% stretching, 47.6% breathing exercises;
- the mistakes in training that can most influence the recovery speed and/or the overtraining were identified;
- the means and methods of monitoring and prevention of the overload during training were approached.

All these aspects can contribute to finding the most efficient means to adjust the physical effort parameters in the 8-10-year-old football players based on the changes in the cardiovascular indices.

Bibliography

1. Lucini, D., De Giacomi, G., Tosi, F., Malacarne, M., Respizzi, S., & Pagani, M. (2013). Altered cardiovascular autonomic regulation in overweight children engaged in regular physical activity. *Heart*, 99(6), 376-381.
2. Sallis, J. F., Floyd, M. F., Rodríguez, D. A., & Saelens, B. E. (2012). Role of built environments in physical activity, obesity, and cardiovascular disease. *Circulation*, 125(5), 729-737.
3. Elbe, A. M., Wikman, J. M., Zheng, M., Larsen, M. N., Nielsen, G., & Krustrup, P. (2017). The importance of cohesion and enjoyment for the fitness improvement of 8–10-year-old children participating in a team and individual sport school-based physical activity intervention. *European Journal of Sport Science*, 17(3), 343-350.
4. Leek D, Carlson JA, Cain KL, Henrichon S, Rosenberg D, Patrick K, Sallis JF. Physical activity during youth sports practices. *Arch Pediatr Adolesc Med* 2011: 165: 294–299.
5. Jastrzebski, Z. (2006). Changes of chosen blood parameters in football players in relation to applied training loads during competition. *Biology of Sport*, 23(1), 85.
6. Nascimento, P. C. D., Lucas, R. D. D., Pupo, J. D., Arins, F. B., Castagna, C., & Guglielmo, L. G. A. (2015). Effects of four weeks of repeated sprint training on physiological indices in futsal players. *Revista Brasileira de Cineantropometria & Desempenho Humano*, 17, 91-103.
7. Larsen, M. N., Nielsen, C. M., Helge, E. W., Madsen, M., Manniche, V., Hansen, L., ... & Krustrup, P. (2018). Positive effects on bone mineralisation and muscular fitness after 10 months of intense school-based physical training for children aged 8–10 years: the FIT FIRST randomised controlled trial. *British journal of sports medicine*, 52(4), 254-260.

8. Krustrup, P., Hansen, P. R., Nielsen, C. M., Larsen, M. N., Randers, M. B., Manniche, V., ... & Bangsbo, J. (2014). Structural and functional cardiac adaptations to a 10- week school- based football intervention for 9–10- year-old children. Scandinavian journal of medicine & science in sports, 24, 4-9.
9. Ghahfarrokhi, M. M., Habibi, A., & Nasab, H. R. (2019). Effect of acute aerobic exercise in different times of day on iron status and hematological factors in professional football players. Journal of Shahrekord University of Medical Sciences, 21(3), 125-130.
10. Calandro, A., Esposito, G., & Altavilla, G. (2020). Intermittent training and improvement of anthropometric parameters and aerobic capacity in youth football.
11. Lebediev, S., Bezyasichny, B., Pertsukhov, A., Shalenko, V., Oval, S., Shpanko, T., ... & Sydorova, T. (2020). Dynamics of morphological and functional indicators of 10-12-year-old football players involved in the children and youth sports school program. Journal of Physical Education and Sport, 20(6), 3521-3527.
12. Amani-Shalamzari, S., Khoshghadam, E., Donyaei, A., Parnow, A., Bayati, M., & Clemente, F. M. (2019). Generic vs. small-sided game training in futsal: Effects on aerobic capacity, anaerobic power and agility. Physiology & behavior, 204, 347-354.
13. Fousekis, K., Tsepis, E., & Vagenas, G. (2010). Lower limb strength in professional soccer players: profile, asymmetry, and training age. Journal of sports science & medicine, 9(3), 364.
14. Larsen, M. N., Nielsen, C. M., Ørntoft, C., Randers, M. B., Helge, E. W., Madsen, M., ... & Krustrup, P. (2017). Fitness effects of 10-month frequent low-volume ball game training or interval running for 8–10-year-old school children. BioMed research international, 2017.
15. Ilxomovich, M. F. (2022). Features of the educational and training process of young football players at the stage of initial training. Web of Scientist: International Scientific Research Journal, 3(02), 1314-1320.
16. Atkins, S. J. (2006). Performance of the yo-yo intermittent recovery test by elite professional and semiprofessional rugby league players. The Journal of Strength & Conditioning Research, 20(1), 222-225.
17. Abdula, A. B., & Lebedev, S. I. (2014). Features of physiological responses on organism of football players aged 10-12 years in exercise using different training methods. Physical education of students, 18(1), 3-7.
18. Domingues, M. (2013). Growth and Functional Development in 6 to 10 Years Old Soccer Players: Constraints and Possibilities. Annals of Applied Sport Science, 1(4), 5-16.
19. Daniel, R. W., Rowson, S., & Duma, S. M. (2012). Head impact exposure in youth football. Annals of biomedical engineering, 40, 976-981.

20. Steffen, K., Emery, C. A., Romiti, M., Kang, J., Bizzini, M., Dvorak, J., ... & Meeuwisse, W. H. (2013). High adherence to a neuromuscular injury prevention programme (FIFA 11+) improves functional balance and reduces injury risk in Canadian youth female football players: a cluster randomised trial. British journal of sports medicine, 47(12), 794-802.
21. Binkley, T. L., Daughters, S. W., Weidauer, L. A., & Vukovich, M. D. (2015). Changes in body composition in Division I football players over a competitive season and recovery in off-season. The Journal of Strength & Conditioning Research, 29(9), 2503-2512.
22. Asken, B. M., McCrea, M. A., Clugston, J. R., Snyder, A. R., Houck, Z. M., & Bauer, R. M. (2016). "Playing through it": delayed reporting and removal from athletic activity after concussion predicts prolonged recovery. Journal of athletic training, 51(4), 329-335.
23. Hammouda, O., Chtourou, H., Chaouachi, A., Chahed, H., Zarrouk, N., Miled, A., ... & Souissi, N. (2013). Biochemical responses to level-1 Yo-Yo intermittent recovery test in young Tunisian football players. Asian journal of sports medicine, 4(1), 23.
24. Jovanovic, M., Sporis, G., Omrcen, D., & Fiorentini, F. (2011). Effects of speed, agility, quickness training method on power performance in elite soccer players. The Journal of Strength & Conditioning Research, 25(5), 1285-1292.
25. Varlet-Marie, E., Brun, J. F., Fédou, C., & Raynaud de Mauverger, E. (2011). Blood rheology and body composition as determinants of exercise performance in male soccer players. Clinical hemorheology and microcirculation, 49(1-4), 225-230.

ASPECTS OF SCHEDULED TRAINING IN ATHLETICS

Assoc. prof., Ph.D. Neder Florina

Ecological University, 1G Vasile Milea Street, Bucharest, Romania

Abstract

The scheduled training consists in fragmenting the content of the material proposed for learning into short, accessible sequences (methodical steps, algorithms, exercise structures, phases of the game, etc.), applied in a predetermined order and having a gradual difficulty. In this way, an adaptation of the contents to the motor possibilities of the pupils (athletes) and to their learning rhythm is achieved. The sequence of exercises depends on the pace of previous acquisitions and the possibilities of assimilation of each student. The principle of the scheduled training consists in the application of a stimulus, which determines a reaction on the part of the student, a reaction that is controlled, verified, validating (or invalidating) both the degree of accessibility of the transmitted knowledge and the durability of the influences. Moving to the next stage in learning depends on obtaining the expected reactions, on the accuracy of the response. The elements in which the informational content is fragmented have received various names: methodical steps, sequences, doses, quants, microstructures, etc. From some characteristics of these elements, the two classic types of scheduled training are recognized: Linear Scheduled Training also called Skinner, and Branched Scheduled Training, also called Crowder.

Key words: *learning, principle, behaviour, drills*

Learning is an acquisition of new forms of behaviour as a result of practice.

Motor learning is the process of appropriation by the individual, through practice, of the motor gesture under the guidance of the pedagogue (Terminologia educației fizice și sportului, 1974).

Motor learning is a type of learning that differs from other types, being a voluntary motor gesture that composes the individual motor baggage (walking, skiing, swimming, etc.) being the object of learning from practice. The motor is taught only what each individual experiences, which results from an active motor experience that determines the formation of personal motor skills (Mihăilescu L., Mihăilescu N., 2002).

This form of training is based on going through a learning program in the form of a predetermined algorithm in which informative sequences alternate with resolution moments, with additional sets of knowledge, etc. (https://www.scrigroup.com/didactica-pedagogie/INSTRUIREA-PROGRAMATA33153.php).

The scheduled training consists in fragmenting the content of the material proposed for learning into short, accessible sequences (methodical steps, algorithms, exercise structures, phases of the game, etc.), applied in a predetermined order and having a gradual difficulty. In this way, an adaptation of the contents to the motor possibilities of the pupils (athletes) and to their learning

rhythm is achieved. The sequence of exercises depends on the pace of previous acquisitions and the possibilities of assimilation of each student (Mitra, Gh., Mogoş, Al., 1980).

The principle of the scheduled training consists in applying a stimulus, which determines a reaction on the part of the student, a reaction that is controlled, verified, validating (or invalidating) both the degree of accessibility of the transmitted knowledge and the durability of the influences exerted (Feflea I., 2012, p. 57). Moving to the next stage in learning depends on obtaining the expected reactions, on the accuracy of the response. If the answer is not the expected one, the teacher intervenes in the training by making the necessary corrections (see the helpful, corrective exercises).

This type of training offers the possibility of individualized treatment of students (athletes), by observing the individual learning rhythm, depending on the particularities of physical development and motricity of the students. Thus, the teacher can design individual work programs (e.g.: individualization trainings on positions or groups of 2-3 players at sports games), can apply differentiated dosages in terms of the number of repetitions, intensity and complexity of effort, etc.

The scheduled training can be linear (Skinner type) or branched (Crowder type) (Dragnea A. et al., 2006). In the first case, the execution of the student (athlete) represents the direct reaction of response to the teacher's command. The second case involves choosing from several variants offered, the correct one.

Examples:

- in sports games: analysis of tactical situations and choice of the most convenient one, following the correct "reading" of the game situation;
- in the physical education class: choosing the most appropriate solutions for going through the applicative routes, the relays and the movement games.

The scheduled training is based on a series of principles (Cerghit I., 1999; Dragnea A. et al., 2006):

a. the principle of "small steps" – according to which the material proposed for learning is made up of short, systematized sequences, applied in a certain order, the transition to the next sequence being conditioned by the correct appropriation of the previous sequence;

b. the principle of gradual progress – involves the establishment of a strict, logical succession of the taught sequences, according to the logic of training in physical education;

c. the principle of immediate verification (strengthening) of the answer – respectively the rapid information of the student (athlete) on its execution and in case of a wrong answer, to intervene immediately to correct the execution;

d. the principle of the individual rhythm of work – the scheduled training involves the independent activity of the student, carried out at his own pace, respecting his/her individual possibilities;

e. the principle of repetition – the program must ensure the execution of a sufficient number of repetitions, in accordance with the degree of difficulty and complexity of the theme;
f. the principle of correct answers – the way of composition of the syllabus must facilitate the student's understanding of the exercises and their execution without difficulty; the student must be oriented, helped to respond correctly, so that he feels the satisfaction of the success of his execution.

The application of the scheduled training involves giving due importance to the feedback process, seen as an open process at both ends (teacher and student). Motor learning in athletics is the organized process of perfecting the motor behaviour acquired naturally, in the field of running, jumping and throwing, with the purpose of adapting to new requirements, as well as learning and perfecting specific motor components - the technique of athletics exercises (Ardelean T, 1990, quoted by Mihăilescu L., Mihăilescu N., 2002, p. 25).

In the methodology of learning the technique of the athletics tests, it is estimated the existence of three stages, namely (Neder Paraschița F., 2010, p. 49):

1. The preparatory stage – includes the initiation in the technique of the exercise;
2. The fundamental stage – includes the actual learning of the technique of the exercise;
3. The final stage – includes the improvement of the technique of the exercise.

1. The preparatory phase has as objectives the following:

- Training in students of the representation (mental image) regarding the technique of the respective test and of the necessary motor skills;
- Development of motor qualities.

Means of realization:

- Enunciating the exercise, demonstrating the technique, explaining, describing the exercise;
- Execution of preparatory exercises by the students.

2. The fundamental stage. At this stage, the appropriation and consolidation of the technique is carried out.

Objectives:

a. Appropriation of the basic mechanism;

By basic mechanism is meant the mandatory succession of some movements, met in phases, with a defined structure, oriented in order to achieve a general form of body movement in running, jumping and throwing (Tatu T., Alexandrescu D., Ardelean T., 1983).

b. Appropriation of the main structural component of the event (the basic link);

By the main structural component (link) of an event is meant that constituent element of the technique, which determines both the way of execution of the other elements and the effectiveness of the realization (Gârleanu D, 1996, p. 21).

c. Appropriation of the other structural components of the event technique;
d. Full appropriation of the event;
e. Development of motor qualities.

Means:

- Execution of parts, phases, sequences of the event technique, materialized by going through a significant range of exercises from the multitude of fundamental ones;
- The integral execution of the event in simplified form, following the appropriation of the main structural component and the appropriation of the other sequences of the event;
- The execution of the entire event gradually complicating the conditions of performance;
- Full execution of the event under competition conditions;

Performing the exercises that require the correction of mistakes occurred in each student.

3. The final stage includes the process of improving the technique.

At this stage it is aimed, based on individual peculiarities, to acquire the most rational motor behaviour, with the highest execution indices (coordination, speed, precision, automatism, etc.) available to the athlete at a certain moment, in order to achieve optimal sports performance.

Performing the exercises that require the correction of mistakes occurred in each student. The final stage includes the process of improving the technique. At this stage it is aimed, based on individual peculiarities, to acquire the most rational motor behaviour, with the highest execution indices (coordination, speed, precision, automatism, etc.) available to the athlete at a certain moment, in order to achieve optimal sports performance.

Conclusions

1. The teaching process is transmitted to the students in an organized way, following some stages and rules.
2. For an efficient appropriation of the technique of athletics exercises, a methodology is followed, called the type of learning scheme, which gradually and surely introduces the student in the practice of athletic skills.
3. In the training of athletes meet 3 stages: preparatory, fundamental and final, each with specific objectives and means.

Bibliography

1. Cerghit I., (1999), Metode de învățământ, Ed. Didactică și Pedagogică, București.
2. Dragnea A. și colab., (2006), Educație Fizică și sport – teorie și didactică, Ed. FEST, București.
3. Feflea I., (2012), Tehnici specifice de predare – curs, Oradea.
4. Gârleanu D, (1996), Curs de atletism, Ed. Universității Ecologice din

Bucureşti.
5. Mihăilescu L., Mihăilescu N., (2002), Instruirea programată în atletism, Ed. Universității din Pitești.
6. Mitrea Gh., Mogoș A., (1980), Metodica educaţiei fizice şcolare, Ed. Sport - Turism Bucureşti.
7. Neder Paraschița F., (2010), ABC-ul atletic, ediție revizuită, Ed. Printech, București.
8. Tatu T., Alexandrescu D., Ardelean T., (1983), *Atletism,* Ed. Didactică şi Pedagogică, Bucureşti.
9. ***Terminologia educației fizice și sportului, Ed. Stadion, 1974.
10. https://www.scrigroup.com/didactica-pedagogie/INSTRUIREA-PROGRAMATA33153.php

CONTRIBUTIONS TO THE DEVELOPMENT OF SPEED AND SUPPLENESS IN HURDLERS

Assoc. prof., Ph. D Neder Florina

Ecological University, 1G Vasile Milea Street, Bucharest, Romania

Abstract

The motor qualities necessary for the speed and hurdlers are speed, endurance (especially anaerobic capacity), strength, mobility, suppleness and coordinative capabilities. For the development and improvement of all forms of speed manifestation, the method of repetitions is used. The resumption of effort is made after the body has fully recovered. The commonly used variant is the one in which the speed of repetitions gradually increases until it reaches its maximum speed. Another variant is that the maximum speed is reached from the beginning. For hurdlers, the sprinter qualities and athletic training are required, which means strength in speed, a great mobility and muscular elasticity. Mobility and suppleness are absolutely necessary for hurdlers. They are developed through: gymnastic exercises performed with great amplitude, executed freely, on devices and with special objects that address the segments that take part in the movement itself, with the help of the partner, exercises specific to the hurdler performed with and without a hurdle, on the spot and on displacement. These exercises can be performed within each warm-up. Suppleness develops with maximum efficiency in conditions where the exercises are administered daily (even twice a day).

Key words: *speed, suppleness, drills, method*

The content of the sports training is represented by a set of factors or elements that compose the structure of the training lessons, as well as the means of achieving them. Each factor or component of sports training has its own rules, goals and means of achievement, and between these components there is a specific interdependence (Encuțescu A., Muraru Anton, 2005).

In the current training of sprinters and hurdlers, one of the objectives pursued is to develop the maximum speed, as well as to keep it over the entire distance. This can be achieved by improving the resistance in the speed regime.

A whole series of factors contribute to the achievement of superior performances, among which we list: the physical and mental qualities of the runner, his morpho-functional development, his technical training (Neder F., 2002).

Running over hurdles, is characterized by a great degree of complexity, runners are in demand multilaterally. Through the form of development, through the requirements it imposes for solving the athletes, through the skills they form, the hurdles event also use the training of athletes specialized in other events (Malcolm A., 1992). Hurdles running require a complete and multilateral development of the body, a high-level increase in all motor qualities, moral and willpower qualities

The level of performance in hurdles marked an important increase, as a result of the development on a wide level of training technique and methodics. The

modern training method focuses more and more on the maximum development of the running speed, simultaneously with the printing of a technique that brings the run closer to the hurdles as much as possible to the run (Gârleanu D., Gârleanu R., 2007). The motor qualities necessary for hurdlers result from the complexity of the hurdles event.

The aim of the work is to carry out a study on the methods and means of development of two of the motor qualities necessary in hurdles events: speed and suppleness.

The exercises used to develop the speed must achieve the following objectives (Bompa T., 2001; Stoica M., 2000):

- to improve the capacity of the muscular system to respond promptly to the commands of the central nervous system;
- to improve strength in order to create the possibility of sudden mobilization in effort of the muscles, with the force necessary for the respective movement;
- to improve the coordination between the working phases of the agonists and antagonists muscles.

Exercises to improve speed (Neder F., 2002; Neder Paraschița F., (2010):

- standing and bottom starts made without command;
- running with start from standing and from the bottom, to command;
- kneeling on the edge of the pit with sand, jumping with a two-legged landing in the sand;
- the starting block placed 1 m from the sand pit, start and long jump without run up;
- from the game of ankles quick lifting, to order, of a knee;
- the same exercise performed from the support with your hands to the wall;
- running with launched start;
- starts from blocks and standing, with and without command in sprint or with the clearance of the first hurdles;
- speed-shifting runs performed both in sprint and over the hurdles;
- running with accelerations on the last part of the distance;
- runs uphill and downhill;
- ankle play with acceleration up to the maximum tempo, on the distance of 20-30 m;
- running with the knees up with acceleration up to the maximum tempo, on the distance of 20-30 m;
- launches from the start, from standing, with acceleration to the maximum tempo, on the distance of 10-50 m;
- running over low hurdles placed at 2.5-3 m with a single step between them;

- clearances over low hurdles placed at a normal or shorter distance by covering the space between them in 3 steps of running;
- running over 3-5 hurdles placed regularly;
- running over 8-10 hurdles placed at short intervals, with the distance between them in 3 steps;
- running over hurdles placed according to the competition race.

In the case of hurdles runs, analytical work is done to develop the speed of the leading leg, of the trailing leg, and globally for the development of the speed of the step over the hurdle.

Mobility and suppleness are especially necessary qualities for hurdlers. Mobility refers to the degree of movement especially in the coxo-femoral joint, while suppleness means the possibility of performing movements with maximum amplitude and ease. Suppleness is closely related to muscle elasticity and joint mobility (Ardelean T., 1990). Mobility and suppleness develop slowly, gradually and continuously, their development activity will figure in all trainings.

Low suppleness creates many disadvantages, namely (https://dokumen.tips/documents/13supletea-calitatea-motrice-al-omului.html):

- It prolongs the period of assimilation and improvement of motor actions;
- Reduces the indices of development of the other motor qualities (speed, skill, strength and endurance) and limits their use with maximum efficiency;
- Decreases the efficiency in performing motor actions, the lack of suppleness being replaced by additional efforts, by high energy consumption;
- The quality of the execution decreases, the movements can no longer be executed expressively, unselfishly, loosely and easily.

Mobility and suppleness are absolutely necessary for hurdlers. They are developed through: gymnastic exercises performed with great amplitude and tensions: bending, twisting, stretching, etc., executed freely, on devices and with special objects that address the segments that take part in the movement itself, with the help of the partner, exercises specific to hurdlers performed with and without a hurdle, on the spot and on the go. These exercises can be performed within each warm-up (Neder Paraschiţa F., 2010).

Exercises for the development of mobility and suppleness:

1. from sitting with one leg stretched forward, the other bent placed over the first with the sole on the ground, the right trunk, is pulled by the knees towards the chest, helped by the arm on the same side, maintaining the position;
2. from sitting, the sole to the sole, arching of the knees are made to the side-down, then forward bends;

3. from sitting, legs stretched out, grasping the heel and bending the torso on that leg, with the head on the knees, maintaining the position; runs on both legs;
4. from sitting, legs stretched out, catching heels and bending the trunk forward, maintaining position; the exercise is also carried out with the forward bringing of the palms on the ground;
5. from sitting away as far away as possible, bending the trunk until it reaches with the elbows on the ground; maintaining the position;
6. taking the position of the hurdle on the ground, bending the trunk to the leading leg, the opposite arm is carried forward-sideways;
7. lying dorsally, rolling on the back with the bringing of the legs over the head, returning to the hurdle position, with the bending of the trunk on the leading leg;
8. trailer leg on the hurdle (trellis), bending of the trunk on the leading leg;
9. leading leg on the hurdle (trellis), repeated bending of the trunk;
10. from the support to the wall, the execution of the movement of the trailer without or with a hurdle normally placed or with the perch placed obliquely;
11. execution of the attack movement to the wall, by lifting on the tip of the trailer leg and bringing the pelvis forward;
12. execution of the attack and trailer movement on the go, between two rows of zigzag hurdles at a distance of 1 step: attack on one hurdle, trailer on the next;
13. side-overs over hurdles laid at a distance of 1 step; left and right side;
14. standing over the hurdle in a jumping step, support with his hands on the perch, raising and descending the pelvis successively;
15. from support bent forward, bringing the tips of the feet to the fingers and bringing them back;
16. on the knee of the leading leg, support on the hands, executing the movement of the trailer starting from the back-up;
17. technical exercises with a hurdle to the wall, from the support forward-down (the body being bent at 90°);
18. exercises for attack: the leg stretched forward, pulling an elastic (attached to the ankle) forward to the back-bottom;
19. exercises for the trailer: execution of the movement of the trailer with weights of 1-2 kg at the respective foot or with elastic.

The hurdles race is characterized by the complex manifestation of all motor qualities. The final result of running depends on the level of development of these qualities and the degree of skill of the technique.

Conclusions

The analysis of the scientific-methodical literature for the running of hurdles allows the outlining of the most important conclusions:

1. Hurdles race is characterized by a great degree of complexity, hurdlers are in demand on a multilateral plane. The hurdles race requires a complete and multilateral development of the body, an increase at a high level of all the motor, moral and will qualities.
2. The motor qualities necessary for the hurdlers are: speed, strength, endurance, mobility, suppleness, skill. It is emphasized that the hurdler is, above all, a good speed runner, a quality without which a good performance can not be achieved in any hurdles race.
3. The modern training methodology focuses on the maximum development of the running speed on sprinting, simultaneously with the printing of a technique that comes as close as possible to the one on sprint.

Bibliography

1. Ardelean T., (1990), Particularităţile dezvoltării calităţilor motrice în atletism, IEFS, Bucureşti.
2. Bompa T., (2001), Dezvoltarea calităţilor biomotrice – periodizare, Ed. Ex Ponto, Bucureşti.
3. Encuţescu A., Muraru A., (2005), Antrenamentul sportiv - Compendiu, Școala Națională de antrenori, București.
4. Gârleanu D., Gârleanu R., (2007), Ghidul antrenorului de atletism, Ed. Printech, București.
5. Malcolm A., (1992), O nouă generaţie de alergători de garduri, Cum se antrenează campionii, Bucureşti.
6. Neder F., (2002), Variaţia vitezei la 100 m garduri junioare, Ed. Printech, Bucureşti.
7. Neder Paraschița F., (2010), ABC-ul atletic, ediție revizuită, Ed. Printech, București.
8. Stoica M., (2000), Capacitățile motrice în atletism, Ed. Printech, București.

https://dokumen.tips/documents/13supletea-calitatea-motrice-al-omului.html

ANXIETY AND AGGRESSION IN ELITE MARTIAL ARTS ATHLETES

Silvestru Valentin[1], Potop Vladimir[2], Mihailescu Liviu Emanuel[3]

[1] *PhD student - University of Pitesti, „Steaua" Sports Club of the Army, Bucharest, Romania*
[2,3] *Department of Physical Education and Sport, University of Pitești, Romania*

Abstract

The purpose of this study is to identify the level of anxiety as a trait and also the level of aggression in the athletes who practice martial arts. It intends to find out the differences between the age categories and also the relationship of the two dimensions evaluated so as to observe the significant distinctions of the two traits. *Material*. The research involves 21 martial arts practitioners (14 boys and 7 girls) aged between 15 - 48 years, from Pankration, Sambo, Judo and Greco-Roman Wrestling. Computerized tests of the CAS ++ psychological testing system developed by COGNITROM and calibrated for the Romanian population were used to identify the level of anxiety and aggression of the athletes. These tests include EMAS and ZKPQ (Zuckerman -Kuhlman Questionnaire of Personality) tests. The EMAS scales are formed of three parts: State Scale (EMAS-S), Trait Scale (EMAS-T) and Perception Scale (EMAS-P). EMAS-T – paper-and-pencil self-assessment questionnaire - measures four situational dimensions of the trait anxiety. This questionnaire has a number of 60 items, namely 15 items for each scale: social evaluation, ambiguity, physical danger and daily routine. The Zuckerman personality test, from which the personality trait referring to aggression –hostility was extracted, evaluates the tendency of verbal and physical expression of the aggression and the impatience shown in interpersonal relationships. *Results*. The level of trait anxiety in the evolution of an elite martial arts athlete is average and slightly below average both for men and women. The age group under 30 stands out with an average level; the athletes aged under 21 have a below average level; the group over 40 years old has a level slightly below average. Regarding the aggression, it can have a value of regulation and self-regulation of the anxiety of an elite martial arts athlete, necessary to achieve performance but it is also an objective of the training process and psychological assistance. The basis of the self-regulation is the athlete's capacity for self-knowledge, namely understanding of one's own behaviors and states through self-analysis and self-criticism of one's own facts and thoughts. *Conclusions*. Good self-knowledge leads to good self-esteem. In this sense, the self-regulations are complex reactions resulted from the relationships of the athlete with the environment. The self-regulations focus on the fully conscious reflection of these relationships, on the appreciation of the external conditions and of one's own possibilities of action.

Key words: *social evaluation, ambiguity, physical danger, daily routine, personality trait*

1. Introduction

Performance sport and anxiety are very difficult to separate. The athletes who have this trait in the structure of their personality feel a state of nervousness already during the pre-competitive period. This state can be amplified during the competitive periods, when athletes become overmotivated, adrenaline secretion

increases and can be interpreted as anxiety, negative thoughts take over reason, all these having harmful effects on their performances (Anshel & Payne, 2006).

Psychologists consider anxiety to be a combination of states of restlessness, fear and worry which entail a reaction to a situation that the athlete perceives as threatening, although this is actually a natural phenomenon. As the body releases adrenaline, which helps to prepare for competition, a number of physiological changes can occur, increasing the sensation of discomfort and fear felt by the athlete. Anxiety is manifested at two levels: *cognitive* and *somatic* (Endler & Parker, 1990). At *somatic* level, anxiety is revealed by some physiological responses (increased heart rate, hollow feeling in stomach, muscle tension, hyperhidrosis etc.). The *cognitive* level involves negative thoughts and expectations, intense concerns, decreased ability to stay focused and process the information, difficulty in making decisions etc. All these symptoms differ from an individual to another, so that some athletes can feel the physiological manifestations more intensely and other athletes - the cognitive manifestations (Epuran & Holdevici, 2001).

The anxiety can be approached as a trait or as a state. The *trait anxiety* is a personality trait that predisposes the athlete to perceive the difficult situations more or less threatening, generating a consequent behavior. The *state anxiety* is a temporary state that the athlete experiences only when facing a certain situation; it is characterized by a rapid change of the feelings of apprehension, worry and nervousness (Epuran & Holdevici, 2001).

One of the common fears is to express oneself in public, both verbally and behaviorally. In the process of psychological preparation for competition, sports psychologists use specific methods and techniques to help athletes to overcome and control anxiety (Andrade, Silva & Dominski, 2020).

Research shows that a high level of self-confidence helps athletes to have very good results in competitions with elite competitors, due to the fact that the anxiety symptoms are reduced. People who have confidence in their abilities have positive reactions in stressful situations (Trujillo-Torrealva & Reyes Bossio, 2017; Knight Jr, 2021).

In the specialized psychological literature, aggression is defined as a „*set of hostile behaviors manifested on all levels: conscious, unconscious or phantasmal*" (Epuran & Holdevici, 2001). Their purpose is the destruction, degradation, coercion, denial or „*humiliation of an object invested with significance, behaviors felt as such and not provoked by this object*" (Holdevici & Vasilescu, 1988).

Both Sigmund Freud and Konrad Lorenz support the idea that aggression is innate. The difference between the two theorists is that Freud defines aggression as predominantly destructive, while Konrad Lorenz believes that aggression has an adaptive value and is even essential for survival (Lahitte & Azcona, 2012). Aggression is an intentional action, aimed at causing physical or psychological damage (Wojdat & Ossowski, 2019). Aggression is considered to be the acquisition

of the behavior types that are oriented towards destruction, behaviors that can cause material, moral or psychological damage (Losîi, 2021). The behaviors of tolerance, cooperation, help and balance are placed at the opposite pole; these concepts are promoted and reinforced within sports such as martial arts (Handrabura, 2005).

The regulation and self-regulation of the martial arts practitioner's behavior is essential because exceptional acts produced under stress require adaptive mechanisms close to perfection. Regulation and self-regulation of athletes' mental states can be a means to achieve performance but also an objective of the training process (Holdevici & Vasilescu, 1988).

The specialized literature on traditional martial arts training highlights that black belts do not at all act like in the violent and aggressive stereotypes shown by popular movies based on martial arts. Moreover, martial arts principles, philosophy and techniques have been successfully applied in the health recovery units to improve the physical well-being of the patients and to modify the attitudes, emotions and behavior of troubled adults and teenagers (Cox, 1993). The possibility that increased participation of adolescents in martial arts exposes them to the risk of experiencing orofacial injuries was analyzed by some specialists (Esmaeilpoor et al., 2021). The martial arts originated from combat techniques used in open and unritualized aggressive confrontations. Two distinct forms of martial art activity must be especially mentioned, namely real fights (Randori in Judo, Kumite in Karate etc.) and highly ritualized dyadic fights (Kata) (Parmigiani et al., 2009).

The studies conducted reveal that the elite martial arts practitioners take part in competitions at a level that involves a high degree of competitiveness and aggression (Bonotto et al., 2016). In Pankration combat, the athlete masters a complexity of arm techniques, strikes, grappling, chocking, but also the necessary strength to dominate the opponent during the fight. For this arsenal of techniques, the athlete needs a team of specialists to guide and motivate him in order to maximize sports performance both in training sessions (physical and mental ones) and competitions (Georgiou, 2008; Stenius, 2013).

The *purpose of the study* is to identify the level of trait anxiety and of aggression in the martial arts athletes. The study also intends to find out the differences between age categories and also the relationship between the two dimensions evaluated so that the significant differences between the two traits can be better observed.

2. Material and method

The subjects of the research were 21 athletes (14 boys and 7 girls) with ages from 15 to 48 years, martial arts practitioners as follows: Pankration (n=11), Sambo (n=4), Judo (n=5) and Greco-Roman wrestling (n=2).

Computerized tests of the CAS ++ psychological testing system developed by COGNITROM and calibrated for the Romanian population were used to identify the level of anxiety and aggression of the athletes. These tests include EMAS and

ZKPQ (Zuckerman) tests. The EMAS scales are composed of three parts: State Scale (EMAS-S), Trait Scale (EMAS-T) and Perception Scale (EMAS-P). It was also used the EMAS-T – paper-and-pencil self-assessment questionnaire that measures four situational dimensions of the trait anxiety. This questionnaire includes 60 items, namely 15 items for each scale: social evaluation, ambiguity, physical danger and daily routine. The Zuckerman personality test (ZKPQ), from which the personality trait related to aggression –hostility was extracted, evaluates the tendency of verbal and physical expression of the aggression and the impatience manifested in the interpersonal relationships.

3. Results and Discussions

According to the results obtained after testing the elite practitioners of martial arts (namely Pankration, Sambo, Judo and Greco-Roman Wrestling), one can observe the following elements (table 1):

Table 1. *Multidimensional Anxiety Evaluation of the martial arts athletes (EMAS-T),* (n=21)

Pankration style			Social evaluation	Ambiguity	Physical danger	Daily routine
Athletes	Age (Years)	Gender				
Subject 1	19	m	37.82	44.61	43.14	63.96
Subject 2	19	m	39.98	56.39	50.48	58.20
Subject 3	22	f	45.63	44.65	21.78	66.57
Subject 4	20	m	49.68	53.18	47.34	63.96
Subject 5	24	m	58.05	56.64	29.87	60.82
Subject 6	42	m	34.48	45.24	38.10	57.61
Subject 7	17	m	43.21	48.90	36.86	54.75
Subject 8	44	m	44.32	50.04	34.88	64.13
Subject 9	15	f	45.25	51.05	37.64	54.37
Subject 10	15	f	54.21	64.44	43.24	70.90
Other combat sports						
Subject 1	45	m	43.09	42.84	34.88	53.25
subject 2	45	m	48.01	42.84	34.88	53.25
Subject 3	22	m	44.75	47.63	27.41	60.82
Subject 4	22	m	44.75	47.63	27.41	56.25
Subject 5	22	m	44.75	47.63	27.41	56.25
Subject 6	23	f	39.34	50.73	27.90	53.81
Subject 7	23	f	39.34	51.74	27.90	56.13
Subject 8	27	f	46.53	55.80	33.00	71.21
Subject 9	43	m	55.39	47.64	42.40	70.66
Subject 10	48	f	41.61	40.53	31.63	59.31
Subject 11	53	m	37.08	44.82	38.02	54.38

Notes: m – male; f – female

EMAS T – *Social evaluation* (fig. 1): a relatively stable predisposition is observed regarding the development of the anxiety, situationally determined by the evaluation of the social situations or the interpersonal relationships. Male persons receive a slightly average and under average score of 35.7% and the female persons

– an average score of 57.10%. The results analysis shows that the anxiety caused by the threatening of the social or interpersonal situations changes with age. Therefore, the athletes under the age of 21 and those with ages between 21-30 feel an average level of anxiety higher than the one felt by the athletes older than 40 years (Chi, 2005; Barczyński & Kalina, 2015).

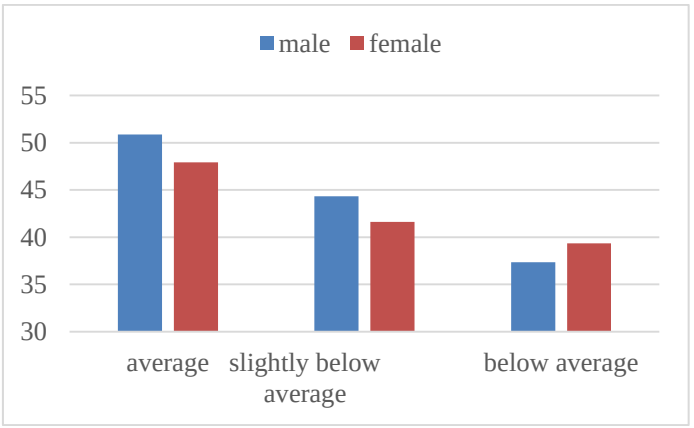


Fig. 1. *Evaluation of social situations or interpersonal relationships in martial arts athletes*

EMAS T – *Ambiguity (fig. 2)*: the anxiety due to the threat related to ambiguity has the following values: in the case of male athletes, 85.7% an average level and 14.3% - slightly below average; as for the results of the female athletes, 14.3% - below average, average - 71.4% and 14.3% - above average. A high average level was achieved by the athletes under the age of 30 years, followed by athletes under 21 and those over 40 years of age.

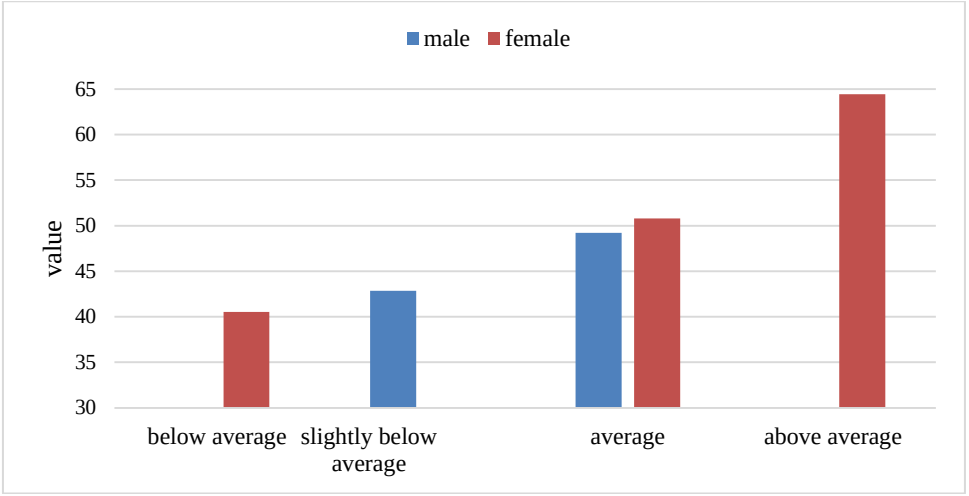


Fig. 2. *Ambiguity in martial arts practitioners*

EMAS T – *Physical danger (fig. 3)*: regarding the anxiety caused by a threat represented by a physical danger, the male athletes obtain a level below average of 42.8% and the female athletes get 28.6% - level well below average and 42.8% - level very much below average. In terms of age of the participants, the athletes of 21 - 30 years old obtain a level very much below average, the athletes over 40 years old – a level below average while the athletes under 21 have an average level.

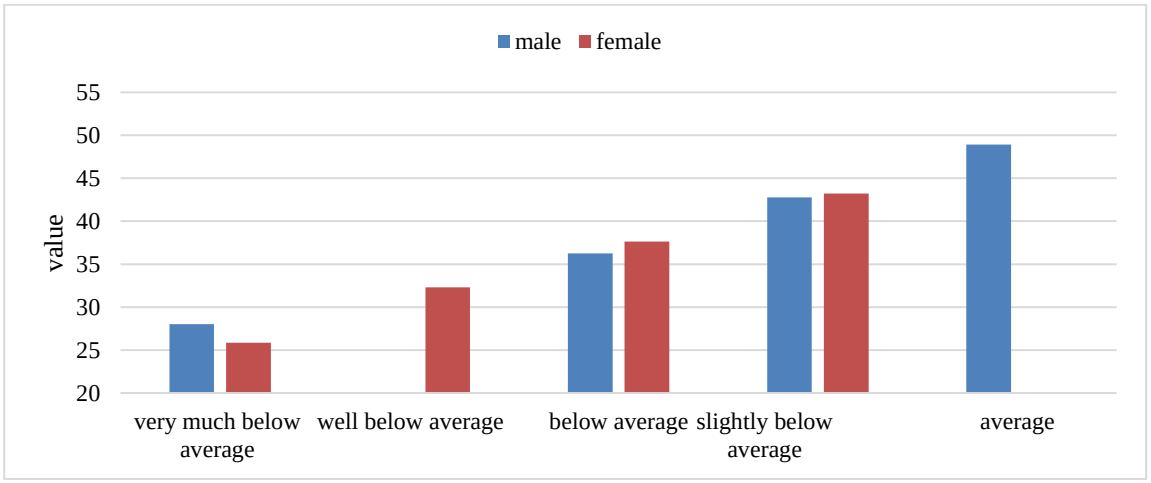


Fig. 3. *Physical profile of athletes practicing martial arts*

EMAS T – *Daily routine (fig. 4)*: the assessment of anxiety resulted from daily routine situations or from harmless one, shows 28.6% - average level and 35.7% - above average in the male athletes. The female athletes obtain 28.6% - an approximately equal variation at all levels, and 14.3%, slightly decreased value, on above average level. The results obtained highlight a slightly over average level in the case of the persons under 30 years; people over 40 years obtained an average level (Sun et al., 2020; Tao, 2021).

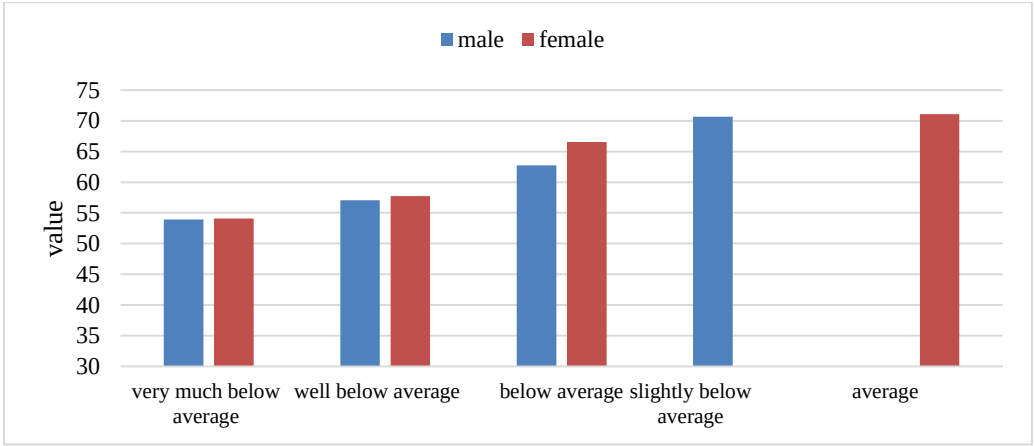


Fig. 4. *Daily routine in the martial arts practitioners*

Endler Multidimensional Anxiety Scales (EMAS) is a set of three scales that measure different types of anxiety. These scales provide a set of tools meant to assess the predisposition of an individual to feel anxious in four types of situations relevant to a large range of experiences (Endler, Edwards & Vitelli, 1991). The three scales that make up EMAS and are applied in this study are: EMAS-S, which measures anxiety as a *state*; EMAS-T is a measure of anxiety as a *trait*; EMAS-P, which assesses the *perception* of the respondent regarding the type and level of the perceived threat in the situation in which he is at that moment (Endler et al., 1991).

ZKPQ (Zuckerman) – it can be used for personality diagnosis in the educational, clinical and health field; it is intended to evaluate five factors that constitute the dimensions of the Alternative Five-Factor Model (AFFM): *impulsive sensation seeking, sociability, neuroticism-anxiety, aggression-hostility and activity* (Joireman et al., 2003; Aluja et al., 2010; Zuckerman & Aluja, 2015). A Zuckerman–Kuhlman–Aluja (ZKA–PQ) personality questionnaire was developed from an initial pool of 537 items. Its final version includes 5 factors with 4 facets per factor and 10 elements per facet. This new tool can be useful for the basic and applied research, including normal personality, psychobiology of personality, clinical and personality disorders and industrial-organizational psychology (Aluja et al., 2010).

Personality traits could be an important factor of asymmetry between athletes that influence the probability to win or lose an agonist interaction, and also the different anticipatory endocrine response to the incipient fight (Trujillo-Torrealva & Reyes Bossio, 2017). The practice of eastern martial arts differs in terms of personality traits. Thus, a study revealed that the highest negative indicators of personality traits – according to social norms – were recorded in the Kyokushin Karate athletes. Another personality profile has been discovered in the aikido fighters, where more moderate physical forms of defensive training are preferred (Litwiniuk et al., 2019).

This research focused on the factor *aggression – hostility* (fig. 5) in the elite athletes practicing martial arts, where the male athletes obtain an average level of 28.6% slightly below average, while the results of the female athletes differ considerably: 57.1% with average level and 42.9% over average. The athletes aged 21-30 have a higher average level of aggression-hostility, followed by the athletes under 21; the athletes over 40 years old scored a low level (Hernandez & Anderson, 2015; Kostorz & Sas-Nowosielski, 2021).

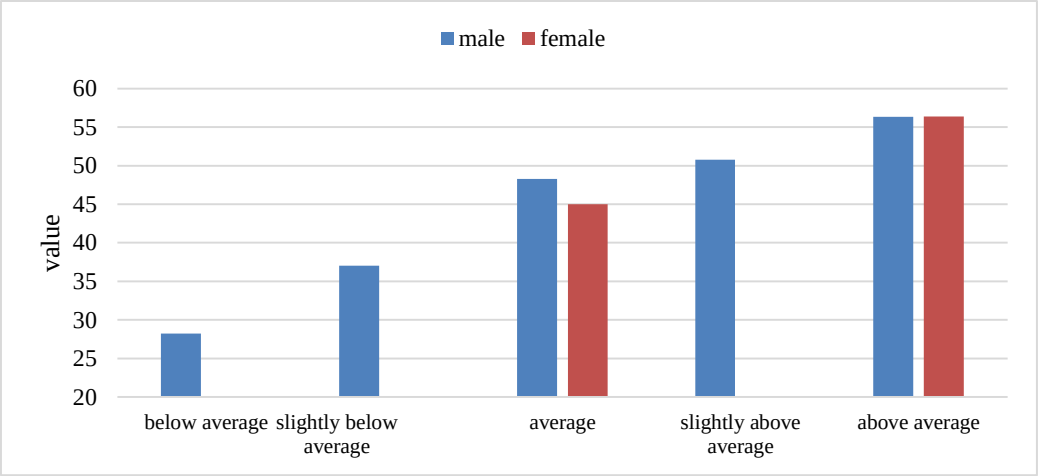


Fig. 5. *Aggression – hostility in martial arts athletes*

A high score on this scale reveals that people openly show their anger and argue with those who have a different opinion. A low score shows that people who are patient with others do not use harsh words or swear words even if they are angry.

There are papers that examined, by means of a cluster-randomized trial, the effectiveness of Chinese martial arts in reducing reactive and proactive aggressive behavior among schoolchildren. The results theoretically proved the relationship between aggression and sports involvement combined with the moral reasoning of children (Fung & Lee, 2018). It was analyzed whether officers with additional martial arts training experience performed better in arrest and self-defence situations under low and high anxiety and succeeded to have better performance under high anxiety than officers who just rely on regular police training (Renden et al., 2015). A study was conducted to examine the different effects of the induced positive and negative emotions (such fear and sadness) on the working memory, creativity, repetition speed and precision in the male athletes who practice football and martial arts (karate and taekwondo) (Predoiu et al., 2016). An observational study about various personality traits and their manifestation in performance karate-do athletes concluded that investigating the athletes' personality traits is a valuable source of documentation for the improvement of both their training process and competitive preparation (Macovei et al., 2014). Other specialists evaluated the motor and psychological factors in the students who practice Olympic taekwondo at various levels. The type and structure of their personality were determined by means of Zuckerman-Kuhlman Questionnaire of Personality (ZKPQ). The level of physical fitness was measured using the test developed by the International Committee on the Standardization of Physical Fitness Tests (ICSPFT) (Litwiniuk et al., 2012).

It was also determined the pattern of anxious reactions in coaches with superior results in competition and identified which facet of anxiety is a better

predictor of sports performance. The results show significantly lower scores in successful coaches compared to novice coaches regarding the anxiety in new situations and in separation conditions (Predoiu et al., 2021). Therefore, the aggression of coaches can be assessed both explicitly and implicitly. A research identified what is specific for successful martial arts coaches, considering aggression and whether implicit aggression is a better predictor of sports performance than explicit aggression

(Predoiu et al., 2022). Mixed Martial Arts (MMA) is a hybrid combat sport that incorporates techniques from boxing, wrestling, judo, jiu-jitsu, karate, muay thai (Thai boxing) and other disciplines. The presence of trait anxiety in both professional fighters and Mixed Martial Artists was investigated, making a comparison with the control of non-Mixed Martial Artists (Pino et al., 2022).

4. Conclusions

The trait anxiety in the evolution of an elite martial arts athlete has an average and slightly below average level in both males and females. The age group younger than 30 years stands out with an average level, the athletes under 21 have a level below average while the group over 40 years old has a slightly below average level.

Aggression can have a value of regulation and self-regulation of the anxiety in an elite martial arts athlete, necessary to achieve performance, but it is also an objective of the training process and psychological assistance.

The basis of the self-regulation is the athlete's capacity for self-knowledge, namely understanding of one's own behaviors and states through self-analysis and self-criticism of one's own facts and thoughts. Good self-knowledge leads to good self-esteem. In that respect, the self-regulations are complex reactions resulted from athlete's relationships with the environment. The self-regulations focus on the fully conscious reflection of these relationships, on the appreciation of the external conditions and of one's own possibilities of action.

Bibliography

1. Aluja, A., Kuhlman, M., & Zuckerman, M. (2010). Development of the Zuckerman–Kuhlman–Aluja personality questionnaire (ZKA–PQ): A factor/facet version of the Zuckerman–Kuhlman personality questionnaire (ZKPQ). *Journal of personality assessment*, 92(5), 416-431.
2. Andrade, A., Silva, R. B., & Dominski, F. H. (2020). Application of sport psychology in mixed martial arts: a systematic review. *Kinesiology*, *52*(01), 94-102.
3. Anshel, M. H., & Payne, J. M. (2006). Application of sport psychology for optimal performance in martial arts. *The sport psychologist's handbook*, 353-374.
4. Barczyński, B. J., & Kalina, R. M. (2015). Science of martial arts–Example of the dilemma in classifying new interdisciplinary sciences in the global systems

of the science evaluation and the social consequences of courageous decisions. *Procedia Manufacturing*, 3, 1203-1210.
5. Bonotto, D., Namba, E. L., Veiga, D. M., Wandembruck, F., Mussi, F., Afonso Cunali, P., ... & Azevedo- Alanis, L. R. (2016). Professional karate- do and mixed martial arts fighters present with a high prevalence of temporomandibular disorders. *Dental traumatology*, 32(4), 281-285.
6. Chi, E. H. (2005). Introducing wearable force sensors in martial arts. *IEEE Pervasive Computing*, 4(3), 47-53.
7. Cox, J. C. (1993). Traditional Asian martial arts training: A review. *Quest*, 45(3), 366-388.
8. Endler, N. S., & Parker, J. D. (1990). State and trait anxiety, depression and coping styles. *Australian Journal of Psychology*, 42(2), 207-220.
9. Endler, N. S., Edwards, J. M., & Vitelli, R. (1991). Endler multidimensional anxiety scales (EMAS). Los Angeles: Western Psychological Services.
10. Endler, N. S., Parker, J. D., Bagby, R. M., & Cox, B. J. (1991). Multidimensionality of state and trait anxiety: factor structure of the Endler Multidimensional Anxiety Scales. *Journal of personality and social psychology*, 60(6), 919.
11. Epuran, M., Holdevici, I. F. (2001). *Psihologia sportului de performanță: teorie și practică*, Editura FEST, Bucharest
12. Esmaeilpoor, A., Mohebbi, S. Z., Moghadam, N., Ahmadian, M., Razeghi, S., & Khami, M. R. (2021). Self-reported experience of orofacial injury, preventive practice, and knowledge of Iranian adolescent martial art athletes towards sports-related orofacial injuries. *BMC sports science, medicine and rehabilitation*, 13, 1-9.
13. Fung, A. L. C., & Lee, T. K. H. (2018). Effectiveness of Chinese martial arts and philosophy to reduce reactive and proactive aggression in schoolchildren. *Journal of Developmental & Behavioral Pediatrics*, 39(5), 404-414.
14. Georgiou, A. V. (2008). Pankration. Black Belt, 4(2008), 92-97.
15. Handrabura, L. (2005). Reflecţii asupra dimensiunii de toleranţă. Revista Didactica Pro…, revistă de teorie şi practică educaţională, 32(4), 23-27.
16. Hernandez, J., & Anderson, K. B. (2015). Internal martial arts training and the reduction of hostility and aggression in martial arts students. *Psi Chi Journal of Psychological Research*, 20(3), 169-176.
17. Holdevici, I., & Vasilescu, I. P. (1988). Activitatea sportivă. Decizie. Autoreglare. Performanță, Ed. Sport-Turism, Bucharest.
18. Joireman, J., Anderson, J., & Strathman, A. (2003). The aggression paradox: understanding links among aggression, sensation seeking, and the consideration of future consequences. *Journal of Personality and social Psychology*, 84(6), 1287.

19. Knight Jr, W. K. (2021). The Relationship between the Practice of Martial arts, Anxiety, Wellness, and Self-efficacy. *Dissertations and Theses*. University of New Orleans.
20. Kostorz, K., & Sas-Nowosielski, K. (2021). Aggression dimensions among athletes practising martial arts and combat sports. *Frontiers in psychology*, 12, 696943.
21. Lahitte, H. B., & Azcona, M. (2012). Consideraciones epistemológicas sobre la modelización conductual: la energética en Freud yen Lorenz. *Revista de Epistemología y Ciencias Humanas*, 4, 26-43.
22. Litwiniuk, A., Daniluk, A., Cieśliński, R., Huk-Wieliczuk, E., Piasecki, T., Obmiński, Z., & Błach, W. (2012). Psychological factors of students training Olympic taekwondo at various level of sports advancement. J Combat Sport Martial Arts, 2(2), 151-155.
23. Litwiniuk, A., Grants, J., Kravalis, I., & Obmiński, Z. (2019). Personality traits of athletes practicing eastern martial arts. *Archives of Budo*, 15, 195-201.
24. Losîi, E. (2021). Agresivitatea preadolescenților-comportament de risc pentru securitatea psihologică. In Asistența psihosocială în contextul noilor realități pe timp de pandemie (pp. 47-52).
25. Macovei, S., Lambru I-S., Lambru, E-.A, & Predoiu, R. (2014). Manifestations of some personality traits in karate do. *Procedia-Social and Behavioral Sciences*, 117, 269-274.
26. Parmigiani, S., Dadomo, H., Bartolomucci, A., Brain, P. F., Carbucicchio, A., Costantino, C., ... & Volpi, R. (2009). Personality traits and endocrine response as possible asymmetry factors of agonistic outcome in karate athletes. Aggressive Behavior: Official Journal of the International Society for Research on Aggression, 35(4), 324-333.
27. Pino, J., van Hauwermeiren, O., Kwamanakweenda, J., Peacock, C., & Tartar, J. (2022). Trait Anxiety in Mixed Martial Artists. NeuroSports, 1(2), 3.
28. Predoiu, R., Makarowski, R., Görner, K., Predoiu, A., Boe, O., Ciolacu, M. V., ... & Piotrowski, A. (2022). Aggression in martial arts coaches and sports performance with the COVID-19 pandemic in the background—A dual processing analysis. Arch. Budo, 18, 23-36.
29. Predoiu, R., Mitrache, G., & Predoiu, A. (2016). The effects of induced emotions on working memory, creativity, repetition speed and precision: a pilot study. Physical Education, Sport And Kinetotherapy Journal, 12(2), 44-51.
30. Predoiu, R., Predoiu, A., Makarowski, R., Piotrowski, A., Pelin, R., & Mitrache, G. (2021). Predictors of superior performance in coaches–the role of A-trait. *Discobolul*, 60(3).
31. Renden, P. G., Landman, A., Savelsbergh, G. J., & Oudejans, R. R. (2015). Police arrest and self-defence skills: performance under anxiety of officers

with and without additional experience in martial arts. *Ergonomics*, 58(9), 1496-1506.

32. Stenius, M. (2013). The legacy of pankration: Mixed martial arts and the posthuman revival of a fighting culture. The international Journal of Combat Martial Arts and Sciences ICMAUA, 13(5), 40-57.
33. Sun, N., Sun, R., Li, S., & Wu, X. (2020). Martial arts routine difficulty action technology VR image target real-time extraction simulation. *IEEE Access*, 8, 155811-155818.
34. Tao, L. (2021). Application of data mining in the analysis of martial arts athlete competition skills and tactics. Journal of Healthcare Engineering, 2021.
35. Trujillo-Torrealva, D., & Reyes Bossio, M. (2017). Mindfulness-Based Intervention Program to Reduce Anxiety Levels in Martial Arts Athletes. *Universidad Peruana de Ciencias Aplicadas* (Lima, Perú) http://hdl.handle.net/10757/621788
36. Wojdat, M., & Ossowski, R. (2019). Comparative analysis of the level's aggression of women and men training Brazilian Jiu-Jitsu in the light of the possibilities for therapeutic purposes. Journal of Education, Health and Sport, 9(5), 319-338.
37. Zuckerman, M., & Aluja, A. (2015). Measures of sensation seeking. In *Measures of personality and social psychological constructs* (pp. 352-380). Academic Press.

KINETOTHERAPY

KINETOTHERAPEUTIC APPLICATIONS IN COMPARTMENT SYNDROME

Cheran Cosmina, F.P.F.S.[1]
Cojocaru Monica Virginia[2]

[1]*Ecological University of Bucharest, Romania*
[2]*Emergency Universitar Militar Central Hospital „Dr. Carol Davila", Bucharest, Romania*

Abstract

Traumas occupy an important place in the pathology, both by the frequency and by the urgency of instituting the treatment, therefore in the treatment several medical-surgical specialties intersect.
The morphological and complex structure of the musculoskeletal system (bones, muscles, joints, nerves, skin, etc.), the close relationship with the central and peripheral nervous system and last but not least the degree of exposure to traumatic agents, justifies the possibility of developing dysfunctions of varying severity, regardless of the etiology of the lesion of one or more components of the musculoskeletal system.
Leg pain is caused by trauma, arthritis, deep vein thrombosis, varicose veins, chronic obliterative arteriopathy or sciatica. The leg is frequently subjected to trauma (fractures, stretches, contusions), which is manifested by swelling, bruising and deformity, with reduced functional capacity. Over time, joint stability may decrease.
The etio-pathogenic treatment can be largely attributed to orthopedics or surgery, prevention, control and recovery of functional deficits that can develop in all stages of the disease, return to physical medicine and especially - Physiotherapy, through exercise, but the physical recovery of the patient, depends on his constitution, the application of medical treatments, but also on the complementary use of physical medicine.

Key words: *compartment syndrome, means of physical therapy, recovery program, lower limb injuries*

1. Introduction

The leg is the segment that connects the thigh to the leg. It extends from the femur-tibial joint to the ankle joint. It is the second important lever of the lower limb, the first being the thigh.

Compartment syndrome is the compression of nerves, blood vessels and muscles within a closed space - compartment - in the body. This phenomenon leads to cell death due to lack of oxygenation; the blood vessels are compressed by the high pressure in the compartment. The pressure due to the developing lesions caused by the initial trauma increases in an enclosed space to the point where the viability of the tissues is compromised.

The correct treatment (in the state phase) is surgical and consists of early and extensive decompressive fasciotomy. In the absence of the correct treatment, the compartment syndrome endangers not only the vitality of the respective segment

(by the appearance of acute peripheral ischemia with onset in microcirculation and centripetal extension), but also the patient's life, which can become a cause of death.

Compartment syndrome can be divided into acute, subacute, or chronic form.

Acute compartment syndrome is a medical emergency that requires immediate surgical treatment - fasciotomes - to allow the pressure to return to normal. The subacute syndrome usually requires urgent surgical treatment similar to that of the acute form.

Chronic compartment syndrome can be treated surgically or conservatively. In cases where the symptoms persist, the condition can be treated by subcutaneous fasciotomy or open fasciotomy. Left untreated, it can turn into acute syndrome. Failure to remove pressure causes tissue necrosis in the compartment, capillary perfusion will decrease leading to increased hypoxia. Volkmann's contracture may occur in the affected limb. Left untreated, compartment syndrome leads to more severe conditions including rhabdomyolysis and kidney failure, potentially leading to death.

2. Material and method

The scientific research methods used are:

1. bibliographic documentation: study of specialized works, study of bibliography.
2. anamnesis: collecting data on the subject.
3. the method of observation.
4. method of exploration and evaluation: which was based on the joint balance of the knee and ankle and muscle of the quadriceps, hamstrings, anterior sural and tibial triceps.
5. case study method.
6. methods of data analysis, processing, and interpretation.

The present work started from the hypothesis: if the biomechanical analysis of the traumatic lower limb sets recovery goals and an individualized recovery program is developed, then any patient who has suffered a trauma to the lower limb can continue activity only if he strictly observes the recommended physical-kinetic treatment.

The aim of the research is to demonstrate, through the mentioned therapeutic procedures, the difference, and the speed of healing of the persons benefiting from the recovery program compared to the persons subjected only to the surgical treatment.

Recovery program objectives:

- ☑ Pain reduction.
- ☑ Gaining joint mobility.
- ☑ Achieving joint stability.
- ☑ Increased muscle strength.
- ☑ Fighting the inflammatory process.

3. Results and Discussions

The study was performed on a 21-year-old patient who suffered a trauma following a serious car accident, being diagnosed with a fracture of the upper extremity of the tibia, with a fibula fracture, undergoing emergency surgery. Clinical and radiological examination confirm the diagnosis of upper 1/3 fracture, both bones of the left leg, with suspected compartment syndrome. Intraoperatively, there is a section of the left distal popliteal artery with proximal thrombosis, modest retrograde flow from the distal, medial and anterior lodge muscles with much diminished contractility in the medial lodge and abolished in the anterior and posterior lodge.

The complex treatment consisted of 2 phases: the acute phase which has 2 phases of recovery (initial - anatomical recovery) and intermediate and the second phase - the final phase (restoration of functionality).

Each of these recovery phases has the following objectives:

Objectives of the anatomical recovery period:

Initial phase: combating pain, controlling inflammation, combating vascular-trophic disorders, joint rest, anti-slope posture - supine position with a pillow at the knee, analgesic medication, anti-inflammatory at the doctor's indication.

Intermediate phase: combating vascular-trophic disorders, facilitating anatomical recovery by improving local circulation, maintaining the functionality of unaffected segments, prophylaxis of loss of muscle strength in the iliopsoas, quadriceps, hamstrings and sural triceps, maintaining gestural imagery effort.

Objectives of the functional recovery period: combating pain and controlling inflammation, readjustment of the joint structures of the knee and ankle, maintaining the ideomotor image related to motor gestures, readjustment to effort, recovery of quadriceps muscle strength, hamstrings, improvement of joint stability, joint stability joint mobility in the knee and ankle, readjustment to specific effort, restoring exercise capacity.

Physiotherapeutic applications in compartment syndrome:

In the kinetic treatment, several recovery programs were used, applied according to the recovery phase in which the patient is. Each exercise was performed in 4-6 sets, with recovery sessions lasting 30-60-90 minutes due to progressively increasing resistance. These programs are: massage programs that included: leg massage, Achilles tendon massage, foot massage and patella massage; passive and active ankle and knee stabilization programs, flexion, extension, eversion and inversion movements at the ankle, towel exercises, elastic bands, walking options, Disc proprioceptors on the disc, exercises to improve breathing.

The recovery process also included a recovery program after suspension from the fixed orthosis and included posture exercises, passive mobilization, self-passive (pulley) and active exercises, the "hold-relax" method and Bürger vascular gymnastics.

The recovery process continued with the restoration of muscle toning which mainly aimed at recovering the muscular strength of the quadriceps, hamstrings, sural triceps and anterior tibialis based on isometric contractions, active movements, active movements with resistance, free active movements and loading. stage exercises focused on re-educating muscle strength.

After the complete recovery of the patient from a physical point of view, the recovery followed with a therapeutic walking program based on different variants of walking, running and jumping.

Results:

The physio-kinetic treatment was applied for a period of about 6 months (the duration being long, due to the complications given by the compartment syndrome), as a result of which progress was made (at the initial and final tests) regarding joint mobility, tone muscle, perimeter of the limbs, decrease in pain in intensity, until it disappears, the patient being completely recovered.

4. Conclusions

• It is necessary to monitor patients with crush injuries, blood vessels, etc., according to the pathophysiological data, given that, although it is an initially localized condition, the systemic consequences of crush injuries occur (in the absence of early treatment, correct) fast, irreversible, endangering the patient's life.

• The physiotherapeutic applications proposed in this paper for traumas that also present with the onset of compartment syndrome aim to improve local treatment and reduce the systemic impact of these traumas, especially in the context in which these types of injuries occur during events with victims.

• Injuries, even minor ones, are capable of triggering compartment syndromes. Clinical picture of intense pain, brutal installation, sensation of tissue tension, plus trauma lead to the suspicion of a compartment syndrome.

• The suspicion of compartment syndrome urgently requires surgical treatment, the excess error being preferable to the missing one, not intervening in time can endanger the patient's life, open leg fractures being involved as often as closed ones.

Treatment of these fractures should be instituted as early as possible. Recovery of leg fractures can be done both in recovery centers (especially during immobilization and immediately after the suspension of the plaster cast), supervised by specialists, and at home, after the patient has been instructed on the correct execution of the exercises included in the program. of recovery. In our case, the patient presenting the complications given by the compartment syndrome, benefited from the individual, specialized physical-kinetic treatment, both in the hospital and in the recovery centre.

Recommendations:

• the treatment applied must be individualized and take into account the severity of the trauma, age, sex and associated diseases.

• to insist on the respiratory gymnastics, as well as on the joints left free to improve the general condition of the patient, especially during the period of immobilization in bed;

• to insist on isometric contractions and anti-slope postures, these being very important during the recovery period;

• as a specialist, the physiotherapist must know the patient very well, inform him of the progress made, convince him to continue the recovery and follow the recommendations made;

• recovery being a sometimes-monotonous period, the physiotherapist must improve his methods and means of recovery and be very creative.

Bibliography

1. BACIU, Clement, (1981), Functional Anatomy of the Locomotor System, Medical Publishing House, Bucharest.
2. BACIU, Clement, (1986), Surgery and protection of the musculoskeletal system, Medical Publishing House, Bucharest.
3. BACIU, Clement, (1981) Pre-and postoperative physiotherapy, Sport-Turism Publishing House, Bucharest.
4. BOURNE, RB, RORABECK, GH., (1989), Compartmental syndromes of the lower leg, Clin. Orthop.
5. KRAUSZ, L., KRAUSZ, L., T., (2004) Physiokinetotherapy - on a pathophysiological basis, Iuliu Haieganu University Medical Publishing House, Cluj-Napoca.
6. NICULESCU, Gh, IFRIM, Mircea, DIACONESCU, Silviu, (1989), Surgery of osteooarticular traumas. Lower member, Military Publishing House, Bucharest.
7. PASZTAI, Z. (2001), Physiotherapy in the functional recovery of the musculoskeletal system, University of Oradea Publishing House.
8. SBENGHE, Teodor, (1981), Medical recovery of post-traumatic sequelae of limbs, Medical Publishing House, Bucharest.
9. SARAH, NICA, Adriana, (1989), Compendium of Physical Medicine and Recovery, "Carol Davila" University Publishing House, Bucharest.
10. ZAHARIA, Corneliu, (1994), Elements of locomotor system pathology, Paideia Publishing House, Bucharest.

Annexes

During the research, the patient was prepared with an evaluation sheet through which initial, intermediate and final tests were performed to evaluate the joint, muscle and function and the perimeters of the thigh, knee, leg and ankle were measured, the result being tabulated and represented graphically, as follows:

Leg fracture surgery
with compartment syndrome

TECAR in immobilized leg fracture in plaster cast

Table 1 *Joint balance*

Joints Measured	Motion	Testing		
		Initial	Intermediate	Final
Knee	Flexie	20^0	145^0	160^0
	Extension	-15	-10	0
Ankle	Flexie	5^0	15^0	30^0
	Extension	15^0	25^0	38^0

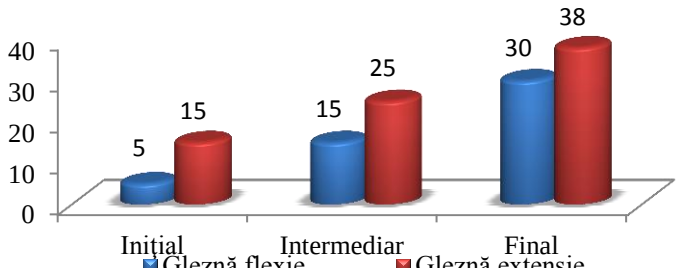


Figure 1. *The joint balance at the level of the ankle*

The joint balance at the level of the ankle, presents:

On the flexion movement - at the initial test, on this movement a value of 5^0 was registered, as a result of the immobilization in fixed orthosis. In the intermediate test, there was an increase of this value by 10^0, reaching in the final phase a value of 30^0.

On the extension movement - at the initial testing the extension movement registered a value of 15^0, this increasing after the application of the recovery programs by 10^0, reaching the end to register a value of 38^0.

From these values it can be seen that the average amplitude of the flexion and extension movements falls within the values of the normal, as a result of the applied kinetic programs.

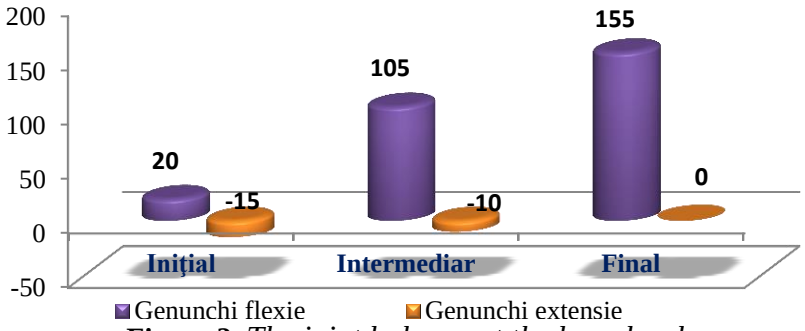


Figure 2. *The joint balance at the knee level*

The joint balance at the knee level shows:

On the flexion movement - at the initial test a value of the joint balance of 20^0 was registered, following that after the application of the media recovery programs to increase by 85^0 so that, at the intermediate test the value of 1050 was registered, and in the final phase a value was reached. of 155^0.

On the extension movement - at the initial test on the extension movement a value of -15^0 was registered, following that in the intermediate phase this value will decrease by 5^0, so the average for this test is -10^0, and in the final phase this value reaches 0.

From these values it can be seen that in the final phase it was possible to reach the normal amplitude of the flexion movement (140^0-160^0) and extension (0).

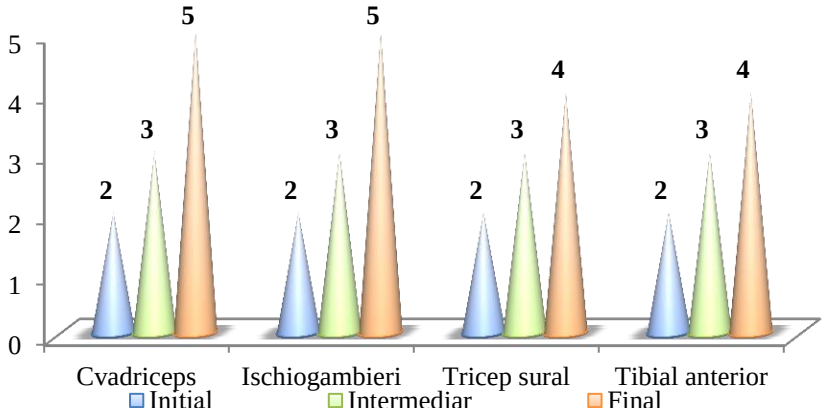


Figure 3. *Graphic representation of muscle balance*

Muscle balance:

For the quadriceps muscle:

• at the initial test this muscle registered force 2;

• at the intermediate test this value at force 3;

• at the final test the muscular balance of the quadriceps muscle registered a force value of 5.

For hamstring muscles:

• at the initial test the value of this muscle was force 2;
• at the intermediate test the strength of this muscle increased reaching a value of 3;
• at the final test, the muscular balance of the hamstring muscles reached a force of 5.

These values show that the quadriceps muscle and the hamstring muscles have the same strength in the initial test, due to the immobilization in the fixed orthosis for posture, which led to atrophy of inactivity, especially of the vastus internal, which cannot be trained by isometric contractions. . At the intermediate and final tests, these muscles develop the same strength, this is due to the good recovery of the patient.

For the sural triceps muscle:

• initially a force 2 was registered, in the intermediate phase it increased by 3, and in the final phase this value reached 4.

For the anterior tibialis muscle:

• in the initial stage the registered force is 2, in the intermediate phase the muscle strength increases to 3, and in the final phase this value reaches up to 4.

The recording of these values highlights the fact that during the recovery program the sural triceps muscle and the anterior tibial muscle recorded the same development values, even if the sural triceps muscle through its function in orthostatism, and its volume is more developed than the anterior tibialis muscle.

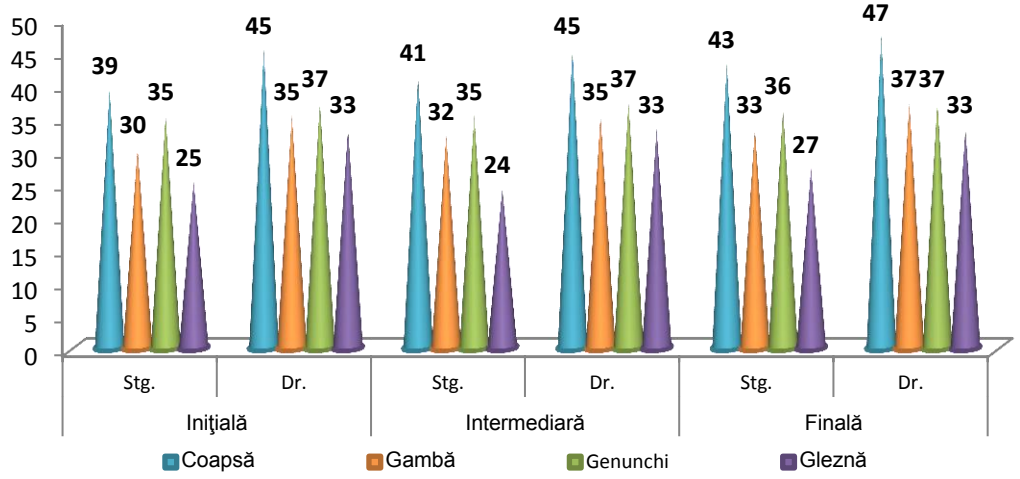


Figure 4. *Graphical representation of perimeters*

Thigh perimeters:

• in the initial stage the perimeter of the left thigh registered a value of 39 cm., And the right one of 45 cm., Maintaining this value in the intermediate stage at the level of the right thigh, but the left thigh registers an increase of 2 cm. final values of the perimeters of the thighs increase: at the left limb by 4cm. compared to the initial test, respectively by 2 cm. at the level of the right limb.

Leg perimeters:

• the initial test of the perimeter of the left leg had a value of 30 cm. respectively 35cm. the right one, this value increases by 2cm. In the intermediate stage (32cm) on the left and right limb, it registers the same value - 35cm., reaching an increase of 1cm at the final evaluation. (33cm.) At the level of the left leg and 2cm. (37cm.) At the level of the right leg.

Knee perimeters:

• at the initial test, the perimeter of the left knee was 35 cm. Respectively 37cm. the right one, these values being maintained in the intermediate test, and in the final phase there were increases in the perimeters of the knees, these being 36 cm. for the left knee, respectively 37cm. for the right knee.

The increase in the final test was due to the toning and muscle strength exercises that predominated in the kinetic program in the last stage. However, the normal value was not reached because the percentage of damage to the left lower limb is higher and given that the patient is physiologically right, the lower left limb has a smaller perimeter than the right one.

Ankle circumference:

• at the initial test, the perimeter of the left ankle had a value of 25 cm, this value decreasing by 1 cm. due to the withdrawal of the post-fracture edema as a result of the applied physical-kinetic treatment and reaching a value of 27 cm at the final test. Regarding the values obtained at the level of the ankle of the right foot, they had the value of 33 cm. to all tests applied.

THE NEW INTEGRATING TREATMENT OF HEMIPLEGIA (Psycho-pedagogical methods and acupuncture)

Eugen Caracas, Agatha Alexandrescu (Vasai)

National Institute of Rehabilitation, Physical Medicine and Balneology, Bucharest

Abstract

The education of the patient is a fundamental process of the medical act that offers the individual and the collectivity the possibility to increase the control of his own health and beyond that the increase of life quality.
Hemiplegia is caused by the lesion of the pyramidal nerve pathways. This lesion is on its own kind, consecutive of a stroke ischemic or hemorrhagic, a tumor or trauma or an infection of the nervous system.
Psycho-pedagogical modalities through which the evaluation of the patient is performed: Interview on behavior, Self-monitoring, Self-evaluation though temperament and personality questionnaires, Use of evaluation scales, Obtaining information about first grade relatives of the patient ,by the method of interview, Clinical observation. After the complex evaluation of the patients, psycho-pedagogical techniques used in the practice of kinetotherapy were applied.
Psycho-pedagogical methods: Advice, Breathing exercises, Relax exercises, Imagination exercises, imaginary representation, mental training. Aucupuncture therapy supports these patients in post-traumatic, energetic balancing, in sustaining healing capacity, using various therapeutic schemes tailored to each case.

Key words: *hemiplegia, integrative treatment, recovery, education, psycho-pedagogical, acupuncture*

SUBJECT CURRENT AFFAIRS:

- diseases that cause selective damage to the body
- lesions that persist even after the pathological process has ceased
- sequelae (persistent destruction) are no longer diseases of their own, but defects that can no longer be removed.

An injury to the nervous system caused by trauma or obstruction of a vessel (thrombosis, embolism) can lead to sequelae:

- paralysis,
- speech impairment,
- balance disorder etc.

PRIORITIES:

1. Elimination of sequelae,
2. Rehabilitation of disability,
3. Adapting the patient to the demands of daily life.

NB: Persistent residual defects must be corrected!

In the case of hemiplegics, recovery and rehabilitation are fundamental components of treatment, especially, but not exclusive in diseases of the musculoskeletal system (neurology, rheumatology or orthopedics).

INTERDISCIPLINARY APPROACH

Recovery therapy through the effects of physical therapy techniques associated with self-regulation techniques:

- suggestion,
- self-suggestion,
- relaxation,
- ideomotor representation.

The introduction of psycho-pedagogical techniques and acupuncture, in the recovery of hemiplegics, speed up the recovery and rehabilitation of patients from a physical and mental point of view.

The paper aims to follow the effects of psycho-pedagogical techniques and acupuncture in patients with central motor neuron injury, stroke (AVC).

MATERIAL AND METHOD

On an experimental group of 20 patients - (9 men and 11 women), who presented hemiplegia, we performed an experiment based on the application of psycho-pedagogical techniques (suggestion, self-suggestion, relaxation, ideomotor representation), acupuncture, concomitant treatment with proprioceptive stimulation H. Kabat.

We have deepened the application of self-regulation techniques to teach patients: breathing, simple relaxation, to control stress and to use positive thinking techniques.

The psycho-pedagogical methods used were scientifically correct and effective, based on judiciously prepared programs.

The age of the subjects ranged from 46 to 70 years with an average of 53.4 years.

The kinetotherapeutic experiment accompanied by psycho-pedagogical methods and acupuncture was performed between 01.02.2018-31.07.2019, in the Qi Integrative Medicine Clinic, Bucharest.

The action programs were drawn up according to a special plan, adapted to age and diagnosis, after which the results obtained were analyzed.

Study methods (morphological and functional investigation):

- Psychodiagnosis, in order to individualize the treatment, to adapt it to personality indices (temperament, attitudes, life experience, cultural level)
- History (where possible)
- Classic general clinical examination
- Clinical examination specific to traditional Chinese medicine for acupuncture technique

Morphological and functional investigation methods:

- Joint testing, on the planes and axes of movement by joint balance
- Muscle testing
- Characterization guide - Belov
- Guide for identifying extroversion and introversion (V. Levi)
- Clinical and energetic evaluation performed by the doctor of alternative and complementary medicine

METHOD AND TECHNIQUES

6 H. Kabat proprioceptive facilitation exercise programs were applied.

Objectives:

- to become aware of the paralyzed half body
- to train the movements of verticalization of the hemiplegic and re-education of gait

PSYCHO-PEDAGOGICAL PROGRAMS WITH A DURATION OF 30–45 minutes.

- The first psycho-pedagogical method - COUNSELING
- Positively influencing all mental processes and functions (attention, memory, decision, opinion, affectivity, attitudes, etc.) - SUGGESTION
- Behavior optimization and healing

PSYCHO-PEDAGOGICAL ACTION METHODOLOGY

- Patients learn relaxation, relaxation and relaxation, and at the end of the kineto session use the following suggestive formulas: "breathing is calm', "I am completely calm" (psychotherapeutic technique derived from hypnosis)
- Jacobson's progressive relaxation, after the patients have reacted positively to the simple (initial) relaxation, is based on the progressive relaxation based on the principle of kinesthetic identification of the state of tension, contraction (muscular), by antithesis with lack of contraction (relaxation)
- Body awareness (Kinetic sense), affective-cognitive experience, through which the subject becomes aware of the latent content, the significance of symptoms, behaviors, imaginary projections and the content of communication - Gorgos (quoted by M. Epuran, 1996)

BREATHING EXERCISES (each program began and ended with a full breath)

- respiratory rate is influenced by emotional states
- in somato-physiological-mental symptoms immediately after the onset of stroke

DESENSITIZATION OR DECONDITIONING

- when a negative thought occurs, the patient will say "stop"
- will you imagine
- then he will analyze it carefully
- it will eliminate it

IMAGINATION EXERCISES, suggesting topics (I. Holdevici, 1988)

- The program of repetition of movements and actions in representation is the foundation of mental training: the repetition of actions by the subject based on "working representations" (M. Epuran, 1982)
- Methods to help the patient cope with stress, gain confidence in treatment, doctor, therapist and psychologist
- INTRODUCTION OF ACUPUNCTURE PROGRAMS

AVC ACUPUNCTURE

- Treatment of strokes according to their types
- Damage to internal organs
- Exclusive damage to the meridians
- Various treatment models in the sequelae phase

DAMAGE TO INTERNAL ORGANS

(treatment should be given every 6 hours, needles will not be maintained)

ACUTE PHASE

It is imperative that Chinese medicine be combined with conventional hospital treatment

The general principles of treatment are:

- relieving spasms
- CPR
- TA adjustment

Treatment points:

P6
SP6
VG 26
LI4
LI11
ST36
LIV3
KI3

HYPERTONIC FORM (SPASTIC)

Points used:

GV26 induces resuscitation,
GV20
GV 16
VB20
KI1
P7
ST40

If we have a clenched jaw they will approach

ST6
ST7
LI4

For abundant sputum
REN22
ST40
For aphasia
REN23
HE5

HYPOTONIC FORM

The treatment is based on "recapturing" the Yang and inducing resuscitation
Points used:
MOXA
REN6
REN4
REN8

PREVENTING YANG COLLAPSE

ST36
SP6
P6
DU4
BL23

AFFECTING THE MERIDIAN

During the sequelae phase or affecting only the meridians, Chinese medicine plays a major role.

Acupuncture gives excellent results in the treatment of hemiplegia and facial paralysis.

Time is a very important factor, the best results are obtained if the treatment is done in the first month after the stroke.

For a stroke older than 6 months, treatment will be very difficult with a poor prognosis.

Treatment principles/observations:

- Lower limb paralysis responds to treatment better than upper limb paralysis.
- Large joints respond better than small ones.

Therapeutic purpose in acupuncture:

- Removal of the obstruction from the meridian
- Balancing and toning the connecting meridians
- Regulating the circulation of Qi and Blood in the meridians

Hemiplegia

According to the TCM it is caused by obstruction of the meridians.

The pronounced stiffness of the joints and the contraction of the muscles indicate blood stasis.

Pathogens obstruct the meridians against a background of deficiency of Qi, blood and Yin.

In treating unilateral limb paralysis, several Yang points are usually selected, the Yang corresponding to movement and agility.

The points on the paralyzed side are punctured to remove stagnant energy from the meridians that cause paralysis (those are maintained for 40-45 minutes).

If an attack is less than 3 months old, the stitches on the paralyzed side are punctured for sedation (keeping the needle for 40-45 minutes) while the stitches on the healthy side are toned (sting and remove the needle). This is because the meridians on the affected side are in a state of Excess while those on the healthy side are in a state of Deficiency.

If the attack is older than 3 months, the spots on the affected side are toned with moxa and the corresponding spots on the healthy side are sedated. This is because after 3 months, the pathogenic factor in the meridians of the affected part is much deeper and they have also moved to the healthy part. At the same time, the obstruction on the affected side leads to malnutrition of the interconnected meridians.

HEMIPLEGIA – ACUPUNCTURE TREATMENT

General points for sedation: DU26; DU20; BL7

Points for removing meridian obstruction

Arm paralysis: LI15; TB14; LI11 LI10; TB5; LI4; SI3

Paralysis of the lower limbs: BL23; GB30 (very important); GB29; ST31; GB31; T32; BL40; GB34; ST36; BL57; GB39; ST41; BL60; GB40

APHASIA

REN23 to relax the throat and promote speech

HE5 controls language and speech

KI6 specific point for the neck muscles

VERTIGO

Points addressed: LIV3; BL18; BL23; KI3; REN4; DU20; GB20

URINARY AND STOOL INCONTINENCE

Points used: BL33; BL25; REN6; REN4; SP6

MUSCLE RIGIDITY AND CONTRACTURE

In the sequelae, the muscles become stiff and contracted and the joints blocked. Lack of movement causes muscle atrophy, damage to tendons and meridians. Physical therapy is an essential stage of treatment

Acupuncture is usually practiced on the points of the Yang meridians, moxa will be used when it is an atrophy of the muscles.

- shoulder joint: LI15
- elbow joint: LI11
- finger joints: LI3, SI3
- other points LI4, TB17

If the muscles on the side of the leg are contracted and atrophied: KI6 and BL62. Although Yang points are used, Yin points should not be neglected either.

They are useful in cases where the patient presents late in recovery, with chronic damage to the meridians and damage to the ligaments.

- HE1 for shoulder
- LU5 for elbow
- P6 for fingers
- SP12 for balance
- LIV8 for knees
- SP5 for toes

PRESENTATION AND DISCUSSION OF RESULTS

The results of the recovery programs by the classical H. Kabat proprioceptive stimulation techniques, by psycho-pedagogical methods and acupuncture, were tested biweekly, so in the months of experiment (pilot) 6 times, where the 20 subjects were much more cooperative, regaining confidence in their own strength, 17 patients, some of them eliminated the anxiety of recovery, which proved that the programs were good (well-designed, accessible to patients at home, helping to improve their physical and mental condition).

Within 6 months (since the onset of hemiplegia), 17 post-stroke patients, 12 men and 5 women, managed to walk with the four-point walking stick.

Conclusions

The recovery of hemiplegics with the help of kineto programs, containing H. Kabat proprioceptive stimulation techniques, accompanied by methods - psycho-pedagogical and acupuncture must be applied differently depending on the vomiting of the subjects, hence the need for strict individualization of complex recovery treatment.

Key messages

Programs must be implemented within a maximum of six months of the onset of stroke.
The essential aspect of recovery and rehabilitation in the case of hemiplegics is that it lasts a long time (months, even years).
These complex recovery programs can and should be applied only in specialized institutions and by specialists.
Most of the time they become a task of the family and even of the hemiplegic himself.

Bibliografhy

- Baciu, Cl. (1981) Pre – and Postperative Physiotherapy, Sport Tourism Publishing House, Bucharest , Romania.
- Baciu, Cl.(1974) Medical Hymnastics Programs, Stadion Publishing House, Bucharest, Romania.

- Caracas, F., Bogdan, C. Caracas, E. (2020) Healing by Music, The second volume, ePublisher, Bucharest, Romania.
- Caracas, E. (1998) Psycho – behavioural manifestations in traumatized subjects, Sport Science, Issue no 9, Bucharest, Romania.
- Caracas, E. (2001 Psycho – pedagogical methodes in the practice of physiotherapy, PhD Thesis, The National University of Physical Education and Sport, Bucharest, Romania.
- Caracas, E. (2019) The efficiency of psycho – pedagogical and acupunctural methods in the recovery of hemiplegic patients, ROINMED 2019, The 7th national Congress on Integrative Medicine 2019, Bucharest, Romania.
- Colson, J.Collison, R (1983). Progressive exercise therapy Wvight, Boston, U.S.A.
- Cordun, M. (1999) Medical Kinesiology, Axa Publishing House, Bucharest, Romania.
- Epuran, M. (1993) Sport Psychology, Unex A- 2 Publishing House,Bucharest, Roumania.
- Essentials of Chinese Acupuncture (1980), First Edition, Beijing, China.
- Iamandescu, I. B. (1997) Medical Psychology, Infomedica Publishing house, Bucharest, Roumania.
- Frederick M.A. Campbell's Operative Orthopaedics, University of Tennessee-Campbell Clinic Memphis,Tenessee, U.S.A., 2013.
- Mayank, P.Karen, F.Daniel, T.,(2003) The spasmodic torticollis Handbook, A Guide to Treatment and Rehabilitation, Demos, NewYork.
- Sbenghe T.(1997) Prophylactic, Therapeutic and Recovery Kinesiology, Medical Publishing House, Bucharest, Roumania.

FUNCTIONAL EVALUATION IN STROKE
Balance of motor skills after a stroke

Monica Cojocaru[1], Iustin Adrian Croitoru[2]

[1] *Ecological University Bucharest, 1G Vasile Milea St., Bucharest, Romania*
Corresponding author[1]: cojocarumonica@rocketmail.com
[2] *National University of Physical Education and Sports, 140 Constantin Noica St., Bucharest, Romania*
Corresponding author[2]: *iustincroitoru@yahoo.com*

Abstract
The process of medical recovery following a stroke involves the effort of several specialists. It is necessary to design a recovery plan with the participation of qualified personnel, both in the field of physiotherapy and experienced masseurs. Extremely important in the action of identifying the effects produced by stroke is the *assessment of motor skills*. Correct identification of stroke effects on motor skills leads to optimal rehabilitation and recovery measures. Either in the acute phase (in the first 14 days after the event), when acting on the stimulation of sensory function in the lower limb, or in the subacute or chronic phase (less than or more than 6 month after the stroke), when acting through medical gymnastics and psysiotherapy, the aim is to re-educate and recover the patient's motor capacity. Recovery from motor deficit is a major component of *neurorehabilitation*. Complete and accurate assessment of motor control, range of motion and synkinesis will be key to a patient's recovery from a stroke.

Key words*: evaluation; stroke; motor recovery; sinkinesia*

Introduction

The experience of several years in clinics and specialized hospitals, revealed to me the complex picture of the problem of recovery/re-education after stroke. Numerous clinical trials have shown that functional re-education is more effective in the acute phase compared to the chronic phase.

The classical methods used in the functional re-education of patients with hemiplegia have not always proved their effectiveness; the results obtained being unsatisfactory (Sbenghe T., 1999).

There was a greater difficulty in obtaining the functional recovery of the upper limb compared to the lower limb. Thus, if about 80% of hemiplegic patients recover the gait technique, only a percentage between 28-57% recover the grip.

Selective voluntary activation disorders affect muscle coordination, which prevents the recruitment of muscles involved in performing a proper motor task, which involves the control of agonist, antagonistic and synergistic muscles.

Balance of motor skills after a stroke

Balance of motor skills involves the evaluation of motor control, range of motion and synkinesis (Corbetta D. et al, 2010).

In central paralysis, voluntary motility cannot be assessed by analytical rating of each muscle for the following reasons:

- lack of selective control over muscles;
- efficiency of muscle contractions – it depends on the position from which the test is performed;
- the degree of spasticity (examples: the great gluteal muscle is evaluated from the dorsal decubitus, the hamstrings from the ventral decubitus, the pectoralis major and the flexors of the forearm are evaluated more precisely if the arm is positioned in abduction);
- a muscle with low strength in an analytical movement can contract strongly in a movement pattern;
- the linear progression on the quotation scale is missing: for example, the same movement cannot be performed in open kinematic chain, but it is possible in closed kinematic chain, therefore the quotation can register large variations (from zero to values close to the normal ones).

All the aspects reported support the need for a global assessment of muscle groups, by actions (flexion, extension, rotation, etc.), specifying whether the patient can perform the movement freely and whether it is achievable in full amplitude.

Voluntary motor balance cannot be expressed by measuring joint amplitudes using goniometers, inclinometers or multimeters. The balance of the joint amplitude will not be an analytical one, but a functional one (MacKay M. J. et al., 2002).

For the upper limb (Kandel M. et al, 2012)

- The stability of the shoulder (abduction, flexion, circumcision) is investigated in order to obtain a postural reaction of the upper limb.

  Quotation:

  0 = inability to perform the movement

  1 = movement performed at full amplitude, but with difficulty

  2 = normal movement
- Elbow stability is investigated.

  Quotation: same as above
- Prono-supination is investigated.

  Quotation: same as above
- Investigate the closing and opening of the hand by grasping an object, followed by leaving the object in the hand

  Quotation:

  0 = impossible movement

  1 = possible grip without leaving the object in the hand

  2 = grabbing and dropping the object is correct

If this test is correct, testing may continue with the investigation of *global and fine seizure*.

The global grip consists in the possibility of making the grip with the five fingers. The fine grip is appreciated by the possibility of making the grip between police-index (Delden Al., 2009).

Among the scales that integrate the function of the upper limb we mention:

- ❖ Action Research Arm Test (ARA);
- ❖ Frenchay Arm Test;
- ❖ Sødring Motor Evaluation of Stroke Patient (SMES);
- ❖ Motor Assessment Scale (MAS);
- ❖ Chedoke McMaster Stroke Assessment.

For the lower limb (Cordun, M., 1999),

- Posterior and lateral stability of the hip is investigated
  - ❖ From the supine position with the bent pathological leg, the knee is maintained in the axis of the lower limb.
    Quotation:
    0 = impossible movement
    1 = possible but incomplete movement
    2 = complete and easily executed movement
  - ❖ From the supine position with the flexed pathological leg, the buttock rises on the hemiplegic side.
    Quotation: same as above
  - ❖ From the supine position with the bent legs, the legs approach.
    Quotation: same as above
  - ❖ From the supine position with the bent legs, the legs are approached and the leg on the healthy side is raised.
    Quotation: same as above
- Knee stability is investigated.
  - ❖ In extension (locking)
    Quotation:
    0 = impossible extension movement
    1 = possible movement, performed in incomplete amplitude
    2 = easy locking and resistance
  - ❖ In flexion, the patient in supine possition, slides his heel on the examination table
    Quotation:
    0 = impossible movement
    1 = possible movement, performed in incomplete amplitude
    2 = easy locking and resistance
- Investigate leg flexion and eversion.
  - ❖ Flexion
    Quotation:
    0 = impossible flexion movement
    1 = possible movement, performed in incomplete amplitude

2 = possible movement, performed in full amplitude

- Eversion

Quotation: same as above

Voluntary motor skills can be assessed using scales that integrate elementary movements into motor controls assessment items. These include (Bernspang B., Fisher A.G., 1995):

- Stroke Rehabilitation Assessment of Movement (STREAM);
- Sødring Motor Evaluation of Stroke Patient (SMES);
- Orgogozo Stroke Scale (OSS);
- Motricity Index (Demeurisse, Demol & Rolage).

Hemiplegic muscle strength deficit can be assessed on the basis of the Held et Pierrot Deseilligny scale (quotation 0-5).

0 = no muscle contraction

1 = noticeable contraction without moving the segment

2 = contraction produces a displacement of the segment, regardless of the angle traveled

3 = the movement can be done against a slight resistance

4 = the movement is performed against a higher resistance

5 = the movement is performed with a force identical to the healthy part

Will be specified:

- the patient's position during the examination;
- the presence of selective dissociation or the appearance of synkinesis.

If the motor balance is good (selectiv) the speed of execution, the analytical muscle strength and the degree of fatigue in concrete situations will be evaluated (Roth E.J., et. all., 1998).

Research into joint amplitudes should be done by slow passive mobilization.

For the upper limb

It's being investigated (Hafsteinsdottir TB., et al. 2010):

- Shoulder mobility: limited for flexion, abduction and external rotation. The causes are pain (tendinitis of the long parts of the biceps, shoulder-hand syndrome, etc) or retractions of the pectoralis major, large round and large dorsal muscles;
- Elbow and forearm mobility: limited for extension and supination;
- Fist mobility: limited for extension and abduction (radial tilt).

For the lower limb

It's being investigated:

- Mobility at the hip: limited for abduction and external rotation;
- Knee mobility: often limited to flexion, due to retraction of the quadriceps muscle;
- Mobility in the ankle: limited for flexion (dorsiflexion) and eversion (due to retraction of the sural triceps).

Abnormal motor balance

In hemiplegic patients, the patient may notice abnormal, involuntary movements called synkinesis, which accompany a voluntary or reflex movement performed by the healthy side, (another limb segment). These synergistic muscle co-contraction have an intensity proportional to the force of the muscle that triggered them and the degree of spasticity of the affected muscle.

Synergy can also be triggered in the healthy limb by the active movement of the paralyzed limb (the amplitude is obviously reduced and the synergy is called "effort",).

a) *The balance of global synkinesis*.

Global synkinesis is the occurrence of involuntary contractions of the entire hemibody during the execution of a lower limb extension or upper limb flexion scheme. They also occur during a sudden and intense exersion: coughing, laughing, movement with the healthy side against a resistance.

b) *The balance of coordination synkinesis*.

This type of sysnkinesis consists of chain muscle contractions, in known combinations, as follows:

- *For upper limb*:
  - abduction and shoulder extension;
  - elbow flexion, forearm pronation;
  - flexing the fist and opening the hand.
- *For lower limb*:
  - adduction, flexion, and internal rotation of the hip;
  - knee flexion;
  - flexion of the ankle and fingers.
- *For upper limb*:
  - lowering and anterior projection of the shoulder blade;
  - adduction and internal rotation of the shoulder;
  - elbow extension;
  - pronation of the forearm;
  - fist extension;
  - closing the hand.
- *For lower limb*:
  - adduction and internal rotation of the hip;
  - knee extension;
  - ankle extension (equine).

Conclusions

Injuries caused by a stroke generally disrupt the motility at the site of the lesion (hemiplegia), the severity of which is determined by the location and extent of the lesion. The onset of this motor deficit is secondary to the disruption of the pyramidal pathway, which controls voluntary motor skills and at the same time,

induces an inhibitory effect on automatic and reflex motor skills *(Cauraugh J.H., et al, 2010).*

Motor deficit is accompanied by movement coordination disorders. At the same time, the loss of certain sensory influences or the difficulty of integrating sensory information exacerbates coordination disorders. These disorders consist of difficulties in the selective activation of the muscle responsible for spatial coordination at the appropriate time, temporal coordination for the performance of a motor task.

Therefore, stroke generates a complex pathology that requires both a multidisciplinary assessment, through specific, sensitive and reproducible assessments intra- and inter-examiners, and the establishment of an appropriate therapy.

Bibliography

1. *Bernspang B., Fisher A.G.,(1995).* Differences between persons with right or left cerebral vascular accident on the assessment of motor and process skills, Arch Phys Med Rehabil., 76:1144–1151
2. *Cauraugh J.H., Lodha N., Naik S.K., Summers J.J.(2010),* Bilateral movement training and stroke motor recovery progress: a structured review and meta-analysis, Hum Mov Sci., 29(5):853-70
3. *Corbetta D., Sirtori V., Moja L., Gatti R. (2010),* Constraint-induced movement therapy in stroke patients - systematic review and meta-analysis, European journal of physical and rehabilitation medicine, vol. 46, n°:4
4. *Cordun M. (1999),* Medical Kinetology, AXXA Publishing House, Bucharest
5. *Delden Al. (2009),* Comparing unilateral and bilateral upper limb training: the ultra-stroke program design, BioMedCentral Neurology, 1471-2377-9-57
6. *Hafsteinsdottir TB., et al. (2010),* Effects of Bobath based therapy on depression, shoulder pain and health-related quality of life in pattients after stroke, Journal of Rehabilitation Medicine 39 (8):627-632
7. *Jones A., Tilling K., Wilson-Barnett J., Newham D.J., Wolfe C.D.A. (2005),* Effect of recommended positioning on stroke outcome at six months: a randomized controlled trial, Clin Rehabil. March, 19(2):138-145
8. *Kandel M., Beis J.M., Le Chapelain L., Guesdon H., Paysant J.(2012),* Non-invasive cerebral stimulation for the upper limb rehabilitation after stroke: a review, Ann Phys Rehabil Med. Dec, 55(9-10):657-80
9. *MacKay M. J. et al. (2002),* Exercise capacity early after stroke, Archives of Physical Medicine and Rehabilitation, vol. 83, no. 12, 1697–1702
10. *Roth E.J., Heinemann A.W. et. all. (1998),* Impairment and disability: their relation during stroke rehabilitation, Arch Phys Med Rehabil., 79:329–335
11. *Sbenghe T. (1987),* Prophylactic therapeutic and recovery Kinetology Medical Publishing House, Bucharest
12. *Sbenghe T. (1999),* Theoretical and practical bases of physiotherapy, Medical Publishing House, Bucharest

VARIA

FORCE DEVELOPMENT – BASIC INSTRUCTIONAL ACTIVITY FOR LOCAL POLICE

Bucur Cezar-Mihail[1], Cojocaru Monica Virginia[2]

[1]*General Directorate of Local Police and Control of Bucharest Municipality, Romania; National University for Physical Education and Sport Bucharest – Doctoral School, Bucharest, Romania*
[2]*Emergency Universitar Militar Central Hospital ,,Dr. Carol Davila", Bucharest, Romania*

Abstract

According to the Law no. 155/2010 – 1st article, Local Police was created *„for using the atributions regarding the defending of fundamental liberties and rights of the person, private and public property, prevention and discovering offenses*".
For performing the professional tasks are necessary general physical trainings/applicative in selfdefence area.
Force training is a major constant of Local Police instructive activities.
For force development, are necessary approaches as: identifying motric needs of the structures; analizing the particularities of employees; periodic trainings, according to a long term syllabus; measurements of body parameters/results at periodic sports events; rules for safety and health at work, nutrition, rest; alternation between training of force and those designated for improving speed, skill, resistance, also selfdefence area; knowing the law for correct force applying; modern training methods (projections of training sessions, distribution of themes on digital supports); experience exchange with other institutions; implementation of operational procedures; recovering media information and experience. ,,Force impose respect" phrase has applicability for Local Police activities only if the force of staff is trained and applied according to the illegal punishable deeds, by legitimate use and avoiding abuse of rights.

Key words: *local police, force development*

1. Introduction

According to DEX online, FORCE is*: ,,Capacity of living beings to submit an effort, to execute physical actions by muscle strain; physical power, vigor, strength".*

According to the Law of Local Police no. 155/2010 – 1st article, Local Police was created: „*for using the atributions regarding the defending of fundamental liberties and rights of the person, private and public property, prevention and discovering offenses into the next fields:*

- *public order and quiet, also security of goods;*
- *traffic on public roads;*
- *construction discipline and street display;*
- *environmental protection;*
- *commercial activity;*

- *evidence of people;*
- *other fields established by the law".*

For performing their professional tasks, local policemen have to participate at periodic general physical trainings/applicative in selfdefence area, for both categories of functional structures from the institution: operational and non-operational.

In most of its content, we will analize the subject of the article according to physical training rules and methods followed by the personnel of the General Directorate of Local Police and Control of Bucharest Municipality – in fact, the biggest and also the best Local Police from Romania, created in January 2011, according to the Law of Local Police.

2. Material and methods

Force training is a major constant of Local Police physical instructive activities.

Exemplifying through the curricula for physical training elaborated by the best Local Police in Romania, anually, Inpectors from the Compartment for Professional Training develops General Plan for training and professional development of the personnel (according to the 25th article of the Regulation for organising and functioning of the General Directorate of Local Police and Control of Bucharest Municipality approved by the Decision of the General Council Bucharest no. 729/2018). The Plan is submitted for approval by the superior functional structure – Service for Human Resources, Security and Health at Work and finally transmitted for approval by the leadership of the institution.

Into the General Plan no. 6891/17.02.2022, one distinct chapter is dedicated

to physical training, with its 2 areas of interest: general physical training and selfdefence applicative training.

In order to have a steady and correct training for force development in case of every employee of the institution are necessary and useful several approaches (analized for approval by the leadership of the institution) as following:

1. *Identifying motric needs of the structures*

It is important to use the individualizing principle according to the specific responsibilities of every structure, especially operative compartments, because of the higher level of risk during their specific atributions and missions executed „*in the street*".

For example, personnel from Logistic Service with executive duties must be trained to have a good physical condition for transporting and repositioning different equipments by periodic training of the spinal and feet muscles with specific exercises (like deadlifts or squats).

Opposite to nonoperative compartments, personnel from operative compartments must focus on training their explosive force involved in applies strong kicks with fingers, fists, edges of hands, elbows, tibias, knees, even forehead or means of intervention (tonfa, rubber or metallic stick) against the opponents, of

course only when it is needed to use the legal force and with a proper level of intensity.

2. Analizing the particularities of each employee

We must adapt all the physical briefings to the specificities of the personnel (age, weight, somatic type, level of physical condition, medical history, also the level of selfdefence knowledges a.s.o.), for every employee trained during the sessions in order to avoid injuries, overtraining and possible negative effects during or after the briefings.

Unfortunately, some employees from Local Police can execute in proper conditions their specific atributions and responsibilities but cannot participate to physical trainings because of some personal medical problems.

According to the operational procedure, in order to avoid accidents during physical briefings, employees must bring a yearly medical certificate emitted by family doctor that proves they are able to participate at physical activities organized by the institution.

For local policemen who cannot participate to some physical exercises as running, movements and exercises selected from bodybuilding, application paths, etc., one alternative method designated to improve the level of force is isometry. Isometric training can be executed anytime, everywhere, at any age – even without sports equipments – and assure a major improvement of force, increasing the resistance against diseases, prevent osteoporosis and relieve strain on joints. Also, isometric training can help employees from Local Police, together with stretching exercises, to mantain a good physical condition for short or medium periods during the year, if other tehniques cannot be executed properly.

3. Periodic trainings, according to a long term syllabus

Every year, the personnel responsible with physical training (for example,

Instructors or Inspectors from the Compartment for Professional Training) must develop a proper syllabus and include certain rules about the frequence and sequence of the physical evaluations or selfdefence tests.

We strongly recommend a minimum frequence of one physical session per week, with a duration of minimum 90 minutes, executed in the first half of the day.

4. Measurements of body parameters/results obtained at periodic sports events

Unlike Romanian Police (public institution of central interest that has an unique internal Regulation: Order of Minister of Administration and Interior no. 154/2004 regarding the activities of physical education and sports from the Ministry of Administration and Interior – normative act that introduce strict rules for these important formative activities), the leaderships of all Local Police from Romania did not succeed to issue, until now, alone or with the support of institutions with legislative powers (Parliament, Government) a similar normative valid act for all Local Police from our country.

These periodic measurements show us what is the level of physical condition for all the personnel and help us to identify its evolution depending to the number, duration and quality of the physical briefings.

That's why we recommend to adapt the main rules from Order no. 154/2004 (like: categories of compartments depending on type of physical request, categories of age, physical scales, fitness tests used to evaluate the personnel, frequence and duration of physical briefings etc.) to the specific activities for physical trainings carried out by each structure of the Local Police. Especially because there are a lot of similar activities made by these 2 public institutions and the level of physical condition must be the same for the personnel of Romanian Police and Local Police. Actually, we can mention a lot of similar activities made during pandemic period for prevent/fight against COVID-19, especially during punctual periods when Local Police was subordinated to Romanian Police (like: mixed patrols made from one policeman and one local policeman that check the use of protection mask in outdoor or indoor public spaces).

5. Establish and respect the rules for safety and health at work, proper nutrition and rest

Every single physical briefing must respect the main set of rules about safety and health at work (including rules about prevent/fight against COVID-19), healthy nutrition and of course assuring optim period of rest, in order to avoid injuries and overtraining.

6. *Adjustment of the frequency, intensity and duration of the physical briefings depending to the major operative needs*

National and international actual circumstances: increasing of the cross-border crime, a large number of refugees arrived in Romania from areas shaken by wars or major crisis (for example: humaritarian crisis in Ukraine), ethnic conflicts, operative situation, unexpected problems of the personnel and the increasing role given to Local Police between the public institutions specialized in assurance the public order and national safety make more and more difficult the possibility to execute all the physical trainings and to assure a massive presence at the briefings.

In these specific situations, we can reduce the intensity and frequency of the briefings, adapt the training curriculum to the major operative needs and use – if needed – methods of training with a smaller duration, like isometry exercises.

7. *Alternation between trainings focused of force development and those designated for improving speed, skill, resistance, knowledge from self-defense area or even relaxat*ion *by using team sports in order to prevent injuries and overtraining*

Practice has proved that we can obtain better results in increasing the level of force by using different methods of training and focus not only on force development, because of the importance we must also give to other basic motor qualities: speed, skill, resistance, together with the necessity of improving the level of knowledge in self-defense area.

8. Knowing the law for a correct force applying

A well-trained local policeman must permanently know and also respect the law, including internal regulations. A proper and legal use of the force is closely linked to the level of knowing the situations when we can use the legal force and when we cannot use it.

The big number of responsibilities and high level of expectation from the Local Police generated by civil society and other public institutions, together with the specificities of personnel from Local Police (like: high average of age, insufficient training in selfdefence area etc.) call for a variety of trainings designed to increase the level of force.

Training only the force in motion, without assurance of a good level of resistance, speed or suppleness can produce rigidity and favour a bad management of the situation when force can be used by the local policeman, in order to assure or restore the public order and security. Otherwise, he will be the one who breaks the law and supports the legal consequences.

9. *Modern training methods (projections of training sessions, distribution of profesional themes on digital supports: compact discs, audio books with sessions of training, memory sticks and other electronic devices)*

These methods help the local policemen to study – on duty or during free time – several modern methods of training and practice them between 2 briefings (for example: how to act in delicate situations like: fight against several opponents or people heavier than them, using different type of objects for selfdefence, techniques for disorientation of the opponent etc.).

10. Experience exchange with other similar institutions

In order to apply modern methods used for force development, implementation of one project for collaboration with a famous and efficient Local Police from other country can give us real opportunities to discover the experience and good results obtain by one foreign Local Police in this instructional direction and adjust them to the specifities of activity carried out by Local Police from Romania.

We can mention one recent proposal belonging to the personnel of Compartment for Professional Training from the General Directorate of Local Police and Control of Bucharest Municipality: a shift of experience carried out with Metropolitan Police from New York – the best Local Police in the world (mentioned by „*Report to the Committees on Finance and Public Safety on the Fiscal 2022 – Executive Budget for the New York Police Department*", May 11, 2021 about its enormous budget of 5.435.401.000 dollars per 2022 year). Shift of experience will be executed on the level of operative compartments (for example: personnel of Services for assurance of public order or Services for Intervention, from both Romanian and American Local Police in Bucharest and New York).

11. Creation and implementation of proper operational procedures, according to the Order of General Secretariat of the Government no. 600/2018

regarding the approval of Code for internal managerial control into the public entities

In order to standardize the physical trainings of Local Police, it is recommended to issue specific operational procedures about how to organize training sessions in selfdefence area or about all activities carried out during the physical exam for employment into the Local Police.

12. Recovering media information and experience

A good policeman is a well-informed policeman. Conclusions obtained from mass-media sources, with the precious help of the specialized compartment with mediatic atributions (like: Service for Image and Communication) corroborated with wide experience of local policemen accumulated during their worthy activity can prevent negative effects as: injuries after fights with offenders, escape of the people detected during illegal activities, escalation of violence a.s.o.

13. Exercises for a good breath and an increase of vital capacity of the lungs

For a maximum efficiency of physical briefings, we recommend to introduce into the yearly syllabus a lesson or more about complete breathing. Power of forced expiration is well known by the practicants of martial arts and can significantly improve the force of hits applied to opponents, in situations when use of the legal force is the only way to stop the criminal acts and restore the legality.

In the same time, exercises for a correct breathing have a major role in a faster recovering of the affected organs – especially lungs – after COVID-19, this tragic „*disease of the moment*" that made, unfortunately, a lot of victims, including numerous policemen from several countries all over the world.

An effective way to increase the level of force is to organize periodic mountain camps, at high attitudes and conduct training in conditions of oxygen deficiency, in collaboration with the Mountain Gendarmerie and the Local Salvamont Services, during which specific breathing exercises will be taught to improve the respiratory capacity and the resistance of local police in demanding situations, with increased mental and energy consumption (accompanied by specific measurements of the evolution of some physical parameters during the camps – blood pressure, pulse, respiratory rate, including level of force involved in execution of push ups, squats, straightening with the bar, clenching of the fist, etc.).

13. Using negotiation and benefits of work team in difficult situations, when the report of forces into the perimeter is unfavorable for a force intervention

Compartment for Professional Training must take appropriate actions to issue and distribute detaliate training methods about how to use the rules of negotiation and urgent call for additional forces for tactical support when the report of forces (small number of local policemen against big number of criminals/offenders) cannot permit a force intervention. In such cases, protocols in use with Romanian Police or Romanian Gendarmerie explains when we can call for their support and the mode of collaboration, including about using the legal force, after their arrival on the perimeter.

In such delicate situation, force used in a wrong and abusive way can lead to negative results by escalation the conflict and put the local policemen in risky situations. On the contrary, a good level of communication and negotiation skills can restablish the legality easier than an uninspired force intervention, with uncertain results, including for the image of Local Police, on a short or medium term.

The purpose of our research was to identify modern methods of improving the level of force during the profesional trainings of local policemen.

Research methods used: study of internal/international legislation, comparison, analoguey, questionnaire and statistical-mathematical analysis.

3. Results and discussions

Well-known saying ,,*Force impose respect*" has a wide applicability for Local Police activities only if the force of staff is trained hard, constantly and applied properly, according to the gravity of the illegal punishable deeds, by legitimate use and avoiding abuse of rights.

,,*Force of Police"* has its major role for sanitation of the society against the negative effects produce by the people or groups of people predisposed to break the law, together with education, culture and religion.

If ,,*Force impose respect"*, let's give our respect, as it should be, to the worthy exponents of the force with ,,*star dust*" on their epaulettes...

Bibliography

1. Bucur C. M., *Planul general de pregătire și perfecționare profesională a personalului din cadrul Direcției Generale de Poliție Locală și Control a Municipiului București în anul 2022 nr. 6891/17.02.2022 (General Plan for training and professional development of the personnel from the General Directorate of Local Police and Control of Bucharest Municipality in 2022 year no. 6891/17.02.2022), pg. 9, 13, 15, 20;*
2. Corey J., Daniel D., Adrienne A., *Report to the Committees on Finance and Public Safety on the Fiscal 2022 – Executive Budget for the New York Police Department, May 11, 2021, pg. 2;*
3. Sabina M., *Kinantropologie. Particularități și capacități motrice în ontogeneză. Antropologie, kinantropologie, ontogeneză. Fundamentări teoretice generale*, U.N.E.F.S. București. – I.O.S.U.D. – Anul I, 2009 *(Kinanthropology. Particularities and motor capabilities in ontogenesis. Anthropology, kinanthropology, ontogenesis. General theoretical background,* National University for Physical Education and Sport Bucharest – Organizing Institution for University Doctoral Studies – 1st year, 2009); - *https://dexonline.ro/definitie/forta*
4. *Legea Poliției Locale nr. 155/2010, actualizată (Law of Local Police no. 155/2010, updated*);

5. *Ordinul Ministrului Administrației și Internelor nr. 154/2004 privind activitățile de educație fizică și sport din Ministerul Administrației și Internelor (Order of the Minister of Administration and Interior no. 154/2004 regarding the activities of physical education and sports from the Ministry of Administration and Interior)*;
6. *Ordinul Secretariatului General al Guvernului nr. 600/2018 privind aprobarea Codului controlului intern managerial al entităților publice (Order of General Secretariat of the Government no. 600/2018 regarding the approval of Code for internal managerial control into the public entities);*

MODERNIZATION OF CURRICULUM MANAGEMENT IN THE FIELD OF TOURISM

Burlacu Alexandra – Gabriela

State University of Physical Education and Sport, Strada Andrei Doga 22, Chișinău, Post code 800008, Republic of Moldova

Abstract

These latter periods, Romania has experienced a process of swift development of the tourism industry, which generates an increase in the demand on the labor market of highly qualified specialists, as well as the need to develop education in the field of tourism.
A greater attention should be paid to the future tourism specialists training. The analysis of the professional tourism specialist's activity can include tourism activity in the domain of communication. The effectiveness of a specialist's activity in the sphere of tourism depends largely on the culture of his communication with tourists and co-workers and implicitly and implicitly by his professional training. The analysis of the specialized literature, in which the problems in the field of tourism practice are approached, demonstrates a low level of the professional culture of the specialists in the field of communication. In this respect, a priority objective is represented by the communication skills of the specialist, being even one of the most important components related to his professional training. A way to achieve it is the modernization of the management of future tourism specialists during their studies. The need to emphasize the training of the future specialist in tourism is explained by the specifics of his professional activity but also by the level of general culture of high school graduates in the field of tourism. However, the study of the level of general culture of specialists and the modernization in the tourism domain prove that schools and high schools do not consider this problem to be a pressing one.

Keywords*: strategy, management, training tourism specialists*

Introduction

Tourism is an educational phenomenon of social and cultural activities that ensures the conservation and sustainable development of the diversity of cultural, historical and natural heritage. The tourist, through the participatory interaction from an emotional, social and educational point of view with the place, culture and people living within different destinations, makes tourism and its sphere involve interaction and dynamism. (Ferreira Carvalho, R. M., Martins da Costa, C. M., Alves Pedro Ferreira, A. M.,2019, Review of the theoretical underpinnings in the creative tourism research field, Tourism & Management Studies, 15(SI), 2019, 11-22). Educational activities in tourism are stable forms of interaction between people in the use of society's resources and the accomplishment of conditions for meeting the most important needs of each person.

Tourism integrates the main aspects of education – moral, aesthetic, physical, patriotic, intellectual. Through tourism, students develop qualities such as observation, curiosity, the ability to operate with knowledge, curiosity, courage,

endurance. The nature of educational activities in tourism depends on the political, socio-economic stability of society, because in an unstable society there is a decrease in the total resources of education and the disappearance of extracurricular educational activity in educational institutions.

Educational activities in tourism are based on traditions and customs which allows to preserve the ideas of humanism, citizenship, patriotism, tolerance, unity with nature, human ecology, multicultural education.

In educational activities in tourism, through the content and forms of tourism activities, significant values from a recreational point of view are reflected, such as leisure time, recreational space, recreational needs. The implementation of educational activities in tourism provides for the definition, setting of goals and selection of educational content, the construction of an educational process for the adequate training of high school students in the field of tourism for the implementation of the educational process in tourism activities.

The important priorities of the pedagogical strategy in the field of tourism are orienting students towards educational purpose in tourism activities and the preservation and development of creativity through tourism. For the managerial practice it is important to know the methodology for developing the tourism strategy, more than the theoretical concepts related to this field.

The theoretical foundations of educational activities in tourism are a system of methodological approaches, ideas and constructive principles that allow us to determine: the essence of educational activities in tourism, the place and functions of educational activities, changes in the educational process in tourism, means of tourism education, educational technologies of tourism.

Based on the analysis of the theory and practice of education, it was concluded that tourism as an educational phenomenon of socio-cultural activities can be implemented based on a methodological provision of the concept of personality-oriented education. Currently, the tourism sector is facing a growing shortage of qualified personnel, especially for positions such as waiters, bartenders, cooks, pastry chefs, maids, etc. The deficit is, in particular, caused by low wages, fiscal constraints and a lack of opportunities for career advancement and unstable working conditions. After a short internship in tourism (hotel, pension, etc.), or after graduation, many young people emigrate from Romania and look for jobs abroad. It is estimated that only 20% of all graduates in the field of tourism start working in the tourism sector in Romania. This deficit influences the way in which these services are provided on a national level.

Purpose of the research. The aim of the research consists in the theoretical and methodological substantiation of the management strategies of the touristic field, which represents a sector of economic interference for many industries.

The research problem is related to the development of theoretical and methodological foundations of educational activities in tourism that determined the purpose of the study to elaborate methodological approaches and principles that

define the concept of educational activities in tourism, as well as identify the bad educational technologies.

At the basis of such forms of educational interaction are the social structures of society and the difficulty of implementation lies in the fact that

- there are no theoretical foundations for modeling educational activities in tourism;
- educational technologies of tourism have not been developed;
- the directions of education in the context of different types of tourism activities have not been identified;
- psychological and pedagogical mechanisms of the impact of tourism on students as they have not been taken into account.

The emergence of this research is due to some *contradictions*: among the existing educational potential of tourism and the lack of development of theoretical foundations; between the types of tourism activities that have their own educational features and the lack of development of a solid choice from a pedagogical point of view; the need to implement educational tasks in tourism and insufficient training of specialists; the need for specialists able to realize the educational potential of tourism and the lack of development of content and methods of education through tourism.

Hypothesis of the research is as follows: the implementation of educational activities in tourism will be successful if: the theoretical bases of educational activities in tourism are elaborated; the educational potential of tourism is grounded; educational technologies of tourism are implemented; the preparation of students for education in the touristic environment is implemented.

Objectives

1. identifying the educational potential of tourism;
2. identifying the theoretical foundations of educational activities in tourism;
3. developing a model of educational activities in tourism;
4. determining the methods of training students for carrying out educational activities in tourism.

Methodology

In the methodological approach, three research methods were used, as follows:

1. The fundamental research allowed the elucidation of the current trends in the field of tourism management, reflecting the premises of the change attested in the researched field. In the fundamental research, the investigations in the form of theoretical studies were framed, which led to the formulation of scientifically reasoned practical conclusions.

2. The research for development aimed at using those methods and means, which can directly influence the practical activity in the field of tourism.

3. The applicative research had the task of providing data for the targeting of the practical activity, in order to streamline the application methods.

The following methods were used in the research:

- systemic, theoretical analysis;
- study and generalization of pedagogical experience;
- method of evaluation of tourism specialists;
- analysis of practical tourism activities;
- pedagogical observations, including those included;
- methods for processing experimental results.

The reliability of the obtained results is ensured by the methodological validity of the initial parameters of the study, based on the principles of determining the educational systems. The data obtained are confirmed by evaluations of tourism specialists, as well as by many years of experimental work carried out.

When selecting the research methods, a specific approach was promoted, based on stimulation, individualization, motivation of the student and the development of self-confidence.

Both traditional and modern methods have been applied, oriented towards cultivating the interes of motivation, activism and creativity.

In the process of research, emphasis was placed on active - participatory methods, which increase the intellectual potential of the students by making a personal effort in the learning process and by preparing for an active and creative professional life.

There were used different forms and methods, specific to the contents and development of the activities with the pupils, focused on the evaluation of the operational capacities of the skills and aspirations.

There were combined in different situations, methods and procedures: the case study, the role-play, brainstorming, Venn diagram, etc.

These methods manage to satisfy both the requirements of a formative education centered on competences and the demands of the students, who want a modern school, where their desires and training needs are the priority.

In the conditions of a modern education, in which the teaching approach must form a flexibility of the students' competences, the use of interactive methods for the development of critical thinking becomes a necessity.

Interactive methods promote the interaction between participants' logic, leading to more active learning with obvious results. The use of interactive teaching-learning methods in the didactic activity contributes to the improvement of the quality of the instructive-educational process: the development of motivation for learning, the development of critical thinking, the transformation of the student from object to subject of learning, the intense engagement of all psychic powers of knowledge, provide the student with the optimal conditions to assert himself individually and in a team.

An imperative of time is the use of modern information technologies in the educational process (computer, telephone, internet). Web resources have been used to select state-of-the-art informational content, to model practical situations.

The stages of research are as follows:

Stage 1

- study and analysis of the scientific literature on the problems of education and education in tourism;
- studying the experience of educational institutions;

Stage 2

- participation in the formation and development of the vocational education system in tourism;
- generalization of theoretical results;
- the introduction of the main provisions in the practice of educational activities.

Stage 3

- carrying out experimental works in the system of continuing vocational education in tourism;
- generalization of research results.

The practical significance of the study lies in the fact that: theoretical provisions and conclusions are used in the educational process of a system of professional education in tourism, practical professional tourism activities are used, educational programs have been developed in accordance with the requirements of tourism.

Directions for the implementation of the educational objectives of tourism in various types of tourism activities provide the following: tourist guides, hospitality, sports and health tourism, touristic and local history, recreative and environmental activities, works of art, culture, nature, sports, history.

A model of international activities in tourism includes the following elements: the aims of education, the content of educational activities, means of tourism, forms and methods, organization of the educational process, the result of the educational activity and its evaluation.

An analysis of the current state of education in tourism made it possible to determine the main trends in the development and modernization of this initiative: consolidation of the possibilities of educational influence, designing interpersonal relationships in the process of tourism and tourism activities, increasing consistency in professional tourism activities, extension of the tourism to the target areas.

Of all the types of modern pedagogical technologies for the implementation of the educational objectives of tourism, the following are acceptable: technologies that promote the ideas of total respect and empathy for the educable; technologies that implement partnership in subjective relationships between educator and educated; technologies of free education, which focus on providing the individual with freedom of choice and independence in the sphere of his life; nature-friendly

technologies using the methods of popular pedagogy, based on the natural processes of personality development of the educated person.

The educational means of tourism that are used in the process of research are as follows: natural and recreational (landscape, flora, fauna, etc.), socio-cultural (culture, religion, traditions, customs), sport and recreation (hiking, rallies, Olympics, competitions), historic and architectural (museums, monasteries, architectural monuments, architecture).

In the framework of the experimental works carried out within the study of educational activities in tourism, tourism activities and tourism education, it was concluded that the specificity of tourism, implemented in the educational process of the universities, allows us to develop optimal ways of introducing, both into the theory, as the practice of educational activities specific to specialists in the tourism sector to holistic models of educational activities meant to ensure the implementation of educational objectives of tourism.

The use of means and methods allows graduates - specialists from the tourism sector to diversify in practical activities the main approaches, forms, principles, knowledge, skills, skills internalized in the learning process.

The introduction of this practical experience makes it possible to obtain high results in professional activities, contributes to the creation of the necessary conditions for the implementation of the functions of tourism and tourism activities, to the maximum capitalization of the research of pedagogical science and of the tourism potential to meet the needs of the individual in the development and improvement of the educational process of tourism.

The condition of success of the education process in tourism is its continuity, implemented through a system of continuous professional tourism education on several levels and in practical tourism activities.

For the practicality of a group, the students received the basics of tourism: arrangement of a tent, packing the backpack, igniting a fire in various weather conditions, orientation elements in the area, familiarization with the technique of moving a group on the route, familiarization with the most interesting tourist and local objects in the country, organization of excursions. The practice also included courses on the basics of safety and survival.

The development and modernization of the content of tourism education must be based on the following principles: universality, integrativeness, integrity, fundamentality, professionalism, variability.

The professional competences developed in the research are the following:

1. the training of tourism specialists with a system of own thinking and action, able to find optimal solutions for stimulating tourism activity;
2. identifying the role of the state in the development of tourism and arguing the importance of national and international organizations in the development of tourism on a national and international level;

3. identifying the development stages of the tourist activity and deducting the contribution of tourism in the development of different sectors of the economy;

4. understanding and using the concepts, theories, principles and fundamental methods of investigation specific to tourism;

5. identifying basic and complementary tourist services, and arguing their importance in satisfying tourist consumption;

6. knowledge of the structure and particularities of the tourist product according to the needs of the consumer.

7. arguing the importance of the travel agency in achieving more efficient tourist consumption and service provision.

The competence-centered curriculum will better respond to the current requirements of social and professional life, of the labor market, by focusing the teaching approaches on the student's concrete acquisitions. The educational process aims to train and develop functional educational skills, necessary for students to continue their studies and / or to enter the labor market.

This curriculum emphasizes student personality formation and focus on final learning acquisitions. In order to successfully achieve competence training, an authentic, relevant and student-centred learning environment must be ensured. The curriculum guides the design, organisation and development of the educational approach in the context of a competence-oriented pedagogy.

These competences are formed through didactic tasks, through the use of interactive techniques, which ensure the most effective way to achieve these objectives is to determine students to be actively involved in theoretical classes and to actively participate in practical classes, focusing on learning through practice, where real experience in the tourist environment is certainly gained.

The curricum has the following objectives:

- training of highly qualified specialists able to efficiently use natural and human resources in order to implement and develop modern management methods in tourism, adapted to the requirements of the market economy;
- training of specialists for professional insertion in management activity in tourism, hotels, public catering as manager in tourism activity, directors of travel agencies;
- providing specialists who will work in rural, agro-touristic and mountain pensions;
- ensuring the training to become efficient leaders in the elaboration and implementation of national projects in the field of agriculture, agro-tourism and environmental protection;
- providing specialists for national agencies carrying out activities of: environmental protection, consumer protection, etc.;
- training and selection of students in order to guide towards the scientific research activity, by further deepening the studies, in order to promote specialists in this field;

- applied scientific research and research activity through European government funding programs.

- the training of highly qualified specialists, who will work in the field of public catering and agro-tourism, able to use efficiently the natural and human resources for the purpose of developing these sectors;

- improving the educational process for the purpose of interdisciplinary connection in order to apply in practice the knowledge of technological engineering and of the knowledge of management and marketing in the field of agrotourism and public catering by the future specialists in the field.

Tourism is an area in which the activity takes place throughout the year, influenced both by public policies and by investment decisions taken by the public and private sector.

The proper development of the tourism sector and the provision of services can only be guaranteed through quality education and training.

The limits of research are as follows:

1. Vocational training programs do not meet the standards required on the market. In many cases, the providers of professional training issue diplomas without offering opportunities for employment or the opening of businesses in the field of tourism;

2. In terms of low wages and the bad reputation of hotel jobs, a considerable number of young Romanians emigrate from the country to work abroad;

3. At the management level, there is a lack of skills, but also limited opportunities for on-the-job training to preserve skills to existing standards and improve performance;

4. There is no adequate in-service on-the-job training to refresh the skills and knowledge of existing hotel staff at different levels.

According to the data provided by the Labour Inspectorate, the tourism sector registered, according to the selected NACE codes, 209,575 employees, representing 3.72% of the total employees.

Bucharest is the largest employer in the tourism sector, with a number of 51,766 employees, representing 3.8% of the total employees in the capital.

Comparing the number of employees in tourism with the total number of employees per county, the team found that the counties with the highest number of employees in tourism are Braşov and Constanţa (more than 5% of the inhabitants work in the field of hospitality).

The seasonality of the tourism industry contributes to the development of double labour markets, made up of the main and auxiliary employees.

Every year, tourism employers face problems in finding seasonal workers for the provision of basic services. Restaurants, hotels, beach clubs and bars in particular are being hit by the growing labour crisis. The lack of staff leads to the dissatisfaction of tourists, due to the low quality of the existing services in the resorts.

Proposals and recommendations

1. rigorous choice of strategies and methods of training tourism specialists;
2. the strategies and methods chosen must be realistic;
3. constantly adapting to market developments;
4. the decisions regarding the future tourism specialists must be taken by the operational managers, putting them into practice;
5. increasing the participation of young people in decision-making or in the field of tourism;
6. it is necessary to permanently follow their developments in the field of tourism, in order to detect as soon as possible any indication, which allows to notice a change of strategy, in order to react accordingly.

Currently, more than necessary are: arrangement of existing tourist spaces, modernization and extension of touristic education platforms, the introduction of new areas with untapped potential into the tourist circuit, the development of rural and agro-tourism as a new form of tourism linked to the traditional activities of the population.

Of particular importance is the corroboration of the touristic development with the adequate arrangements of the general and touristic infrastructure, with the increase of the level of general, professional training, of the behavior of the tourism staff, the imposition of a quality level of development of the touristic act.

Conclusions

In conclusion, it has been noted that the level of training in the field of tourism not only fails to promote an education based on the values necessary for sustainable tourism, but also does not provide the educators with the practical skills they need to enter the labor market (Mínguez, C., Martínez-Hernandez, C., Yubero, C., Higher education and the sustainable tourism pedagogy: Are tourism students ready to lead change in the post pandemic era? - Journal of Hospitality, Leisure, Sport & Tourism Education, Volume 29, November 2021, 100329).

The European Commission estimates that less than 20% of high school and university graduates choose to work in the tourism sector. However, as has been noted, many of those who have specialised for the tourism sector prefer to look for a job abroad. The phenomenon of emigration applies to both highly skilled and low-skilled personnel.

Employment in the Romanian tourism sector is unattractive, mainly due to low wages, lack of opportunities for career advancement and unstable working conditions in terms of seasonality. The degree of use of modern technology in tourism is quite low.

As the studies carried out show, the majority of tourism staff have higher education, while a large part of the staff in the other areas of tourism are poorly qualified. They work on a temporary basis and are mostly employed on short-term contracts. There is another phenomenon, that of overskilled personnel working in

the tourism sector, with university degrees, but in another field, which is not related to tourism.

In general, the Romanian tourism sector must better meet new dynamic developments and make better use of IT and digital technologies and, at the same time, develop a sustainable workforce.

Currently, education and professional training for the hotel and tourism sector in Romania is mainly provided through a series of specialized high schools, vocational education institutions and in the faculties with economics and geography profile within certain universities. All this is under the coordination of the Ministry of Education.

The education system in Romania is affected by a number of challenges. According to a Commission European study, in the field of vocational education and training in the field of tourism, the administrative capacity at the level of political decision-makers in education, in the central and decentralised structures, is not homogeneous. The analysis of the educational needs for the tourism sector must be approached as a whole, with the participation of all stakeholders, including the government and the Ministry of Education, employers' associations (private sector), and associations and trade unions.

According to experts working in providing training, they are not aware of functional systems of consultations with the government on tourism education issues. The tourism sector is characterized by a strong seasonal nature of activity. This reduces the possibility of formal training, for example, through projects funded by the European Social Fund (ESF). This is largely the consequence of the fact that, in high season, staff are unable to attend training courses, and in the off-season, the majority of staff are not employed and are therefore not eligible for many training modules. Each vocational training school in tourism has the obligation to set up the Commission for the Evaluation and Quality Assurance of Education, which will develop and put into practice a multiannual plan and annual operational plans, which also include self-assessment of the school's activity.

The mission of tourism education is the rapid and progressive professionalization of the tourism industry, strengthening the positive impacts of tourism on all spheres and living environments. The condition of success of educational activities in tourism is its continuity, implemented through a system of continuous professional tourism education on several levels and in practical tourism activities.

As a result of the research, it was found that the cultural, historical and socio-pedagogical premises for educational activities in tourism are the following: the development of international contacts, cultural ties; integration of cultural and historical heritage; principles of nationality, national identity; the development of tourism for the purposes of peace, culture, education of the individual; approval of national, humanistic priorities in the field of economy, technology, science, politics, ecology; the affirmation of the economic, social and spiritual

independence of the individual; the approach oriented towards educational activities; orientation in educational activities towards the affirmation of values such as citizenship, patriotism, tolerance, etc.;

Tourism is an educational phenomenon of socio-cultural activities that allows the full realization of the goals and objectives of educational impact because the development and modernization of the educational system of tourism is based on the integration of cultural heritage, natural and recreational potential and a personality-oriented approach in education.

A tourism performance management system works when the following conditions are met by an organization: a vision of its objectives is shared by all employees; establish individual and departmental criteria and performance levels in direct connection with the major objectives; continuously review progress towards those levels of performance; utilizes the analysis process in order to establish the training, development and rewarding needs; evaluates the effectiveness of the whole process in order to improve it.

The search for the solution regarding the creation of organizational-pedagogical conditions that can ensure the training in the field of tourism required a specific study of this problem.

Starting from the modern conceptions of education, especially from the conception of the social development of the future tourism specialist, which includes the formation of professional skills and competences, as well as the development of successful forms and methods of communication as a strategic objective of any educational institution, we consider it is appropriate to ensure the formation of the culture of communication of the manager in tourism on two levels: at the humanitarian level of the educational process and at the level of specialized professional training.

The reorganization and development of Romanian tourism must be based on an adequate legislative and institutional framework, which would support the structural changes at macro and microeconomic level, on the continuous improvement of the staff – especially of the touristic management, therefore, on multiple and varied policies that allow its adjustment to the standards of the European Union, its integration into European and world tourism.

Bibliography

1. Botezat, E. (2003) *Strategii manageriale în turism*. București, Editura Economică.

2. Ciornei, A., et al. (2016) Abilități antreprenoriale în turism, Editura Fulger.

3. Cosmescu, I. (1998). *Turismul fenomen complex contemporan*. București, Editura Economică.

4. Gabriela S. (2003) *Managementul operațiunilor de turism,* , Editura All Beck, Bucuresti.

5. Gherasim, T., Gherasim, D. (1998) *Marketing turistic*, Editura Economică, Bucureşti.
6. Gruia, R. (2017) *Management şi dezvoltare în industria turismului,* Editura. Lux Libris, Braşov, ISBN 978-973-131-380-1.
7. Ferreira Carvalho, R. M., Martins da Costa, C. M., Alves Pedro Ferreira, A. M.,2019, Review of the theoretical underpinnings in the creative tourism research field, Tourism & Management Studies, 15(SI), 2019, 11-22
8. Florescu, G. I. (2008). *Implicaţiile aderării la Uniunea Europeana în sectorul turismului*, comunicare susţinută în cadrul Simpozionului internaţional „Mediul de afaceri în contextul aderării României la Uniunea Europeana", desfăşurat la Braşov, noiembrie 2007, organizat de Clubul Economiştilor Braşoveni, apărută în volumul tipărit cu acelaşi titlu, Editura Universității „Transilvania" Brașov.
9. Foriş, T. (2001). *Manual de formare managerială în turism*, Editura Psihomedia, Sibiu.
10. Ispas, A., Patriche, D., Brătucu, G. (1999). *Marketing turistic*, Editura Infomarket, Braşov.
11. Mínguez, C., Martínez-Hernandez, C., Yubero , C., Higher education and the sustainable tourism pedagogy: Are tourism students ready to lead change in the post pandemic era? - Journal of Hospitality, Leisure, Sport & Tourism Education, Volume 29, November 2021, 100329
12. Platon, N. (2016). *Particularități de gestionare cu resursele umane în cadrul întreprinderii turistice*. În: Strategii și politici de management în economia contemporană, conferința națională cu participare internațională, ediția a V-a, din 25-26 martie 2016, Chișinău, ASEM.
13. Stănciulescu, G. (2013).*Managementul agenției de turism*. Ediția a III-a, Editura ASE, București.

Webography

1. https://ro.wikipedia.org/wiki/Management_strategic#/media/File:Tabel_strategii.jpg
2. www.didactic.ro.lectie.educatie.antreprenorială - Evaluarea unei afaceri
3. https://library.usmf.md/old/downloads/ebooks
4. http://marketingdirect.biz/blog/instrumente-de-marketing-direct/;
5. http://under30ceo.com/the-new-management-culture-doing-business-not-just-talking-about-it-2/;

ELITE SPORT MANAGEMENT

Dina Nicolae-Adrian

[1] *Phd student, State University of Physical Education and Sport, Chisinau, Republic of Moldova*

Abstract

Contemporary performance sport has a special place in all forms of practicing physical exercises, performance sport has its own regulations, its ethics requires initiation, skills, rhythmic practice, provided through training. It is also characterized by the comparative element, which is its most original feature.

The political and socioeconomic power of elite athlete success, in both individual and national teams, resulted in many strong performing nations including elite sport in their national policy agenda. The focus on elite sport policy, elite funding and a strategic approach to developing athletes represents a key policy agenda for many countries.

Thus, respecting the success factors in management, the qualities of a good manager, the essential problems to be solved by managers and defining competition as the fundamental form of sports activity in achieving sports performance, we can give approximately a definition of management in performance sports.

Key words: *management, sport, performance, manager*

1. Introduction

Performance sports management is a distinct branch of sports science, because it meets the basic requirement of having its own field of research, uses scientific methods in investigating its object and reaches general theoretical truths, which further explain the reality, researched and theses are issued to help practice. The act of sports management in our country is performed by a technical, methodical, economic, and organizational staff of specialists, selected on the basis of skills, knowledgeable in the field of sports.

By giving a brief example of the three concepts, management, manager - and performance sports and respecting the principles, functions, attributes, factors and qualities that must be met we can develop and highlight management in performance sports.

In the exact definition of the title we must accurately exemplify the basic notions of the three important concepts: management; manager; performance sport.

Management is the process of planning, organizing, training and controlling the efforts of members of an organization and using other organizational sources to achieve organizational goals (Luca G., 1993; Voicu A., 1998; Nica P., 1966).

Management is the set of steps, methods and procedures for planning, organizing, allocating resources, control, activation and animation of an organization (Nica P., 1997; Iacob I., 2002).

2. Material and method

The research methodology lies in the analysis and generalization of literature, study of working documentation.

3. Results and Discussions

The quality of management in performance sports within a sports organization is assigned and achieved by the senior manager together with the team he formed, here being involved the middle and front-line manager, who have specialized knowledge in the field of sports in which it operates. Thus, the senior manager (director, president) must constantly collaborate with subordinates within the organization, who have responsibilities in achieving the objectives set, establishing a strategic orientation, a favourable climate in the development of interpersonal relations and showing professionalism.

As these responsibilities have a different importance from one hierarchical level to another, it turns out that the qualities they must have been also different. Thus, managers must have a capacity for strategic orientation, the ability to develop interpersonal relationships and specialized professional knowledge.

Within sports organizations, the manager establishes together with the front line managers (supervisors), in this case the teacher or the specialized coach, the strategy on the sports branch, which includes: planning; the appointment; organization; objectives; terms of achievement; sets the annual budget; budgetary and extra-budgetary material and financial resources (equipment); allocating resources in order to achieve and achieve objectives; responsibilities; control and evaluation (Iacob I., 2002, Budevici A., 2002).

Ensuring the great performances in perspective, implies a complete approach of all aspects related to the process of organization, direction and leadership.

The strategy is the result of evaluating the interconditions between the internal situation of a sports organization, the goals pursued by them and the external environment in which it evolves, it is the way to achieve the proposed long-term objectives for which the organization advocated. Tactics is the way achieved simultaneously and successively with other distinct ways of achieving the strategy, by pursuing the achievement, in the short term, of a sub-objective derived from the general strategic objective.

Sports training is a complex process, carried out systematically and permanently, gradually, the process of adapting the human body to intense physical, technical-tactical and mental efforts, in order to obtain significant results in a branch or sports event. Being a pedagogical process, the sports training is led and conceived by a specialist, aiming at the athlete who wants to improve his motor qualities and technical-tactical skills, in order to achieve a superior sports performance. The coach-athlete relationship allows to highlight the managerial side of the coach's activity within the process regarding the conception, organization, management and evaluation of the result obtained by the athlete.

The managerial attributions can be concretized and identified with the functions of programming and planning, of organization, of management and motivation, of evaluation and control.

The coach becomes the technical manager, who ensures the realization of the product expressed through sports results or performances, he can be considered the main character. In sports, he also ensures the selection, training and affirmation of successive generations of athletes, able to achieve superior performance nationally and internationally.

Planning is a process that provides for the evolution and progress of results, through the demands and progressive adaptations of the athlete's body to the effort requirements of sports training.

In order to achieve good quality management, a sports section within a sports organization must include as many specialized coaches as possible, working with athletes of the same age category, where competition automatically leads to progress, as well as coaches to work with athletes of different age categories (beginners, advanced, performance).

A poor-quality management occurs when the success factors in management are not respected, when the qualities of a good manager are lacking, when the main manager tends to achieve personal goals, and conflicts arise between managers that lead to failure to achieve the proposed objectives.

Having a strong selection base, we will also have a strong competition, as a result of which the best prepared will always win. For example: in a section where an individual sport is practiced, we have a number of ten specialized coaches. Each is committed to making a wide selection of children and juniors based on well-established tests and control rules. After the initial selection, we assume that each coach will remain in the section with a number of 20 athletes. Thus, in total we will have 200 athletes and after a period of sports training we will have a lot of competition. After the intermediate selection, we will be left with 100 athletes, so each coach will be left with 10 athletes. Within the final selection, there will be 50 athletes left. These athletes will continue to perform a thorough training respecting all the parameters of the components of sports training and, following participation in competitions and direct meetings, there will be 10 athletes, who will certainly participate in local and national competitions, where they will achieve results according to objectives established. Thus, after 4 years of training, during which time they have mastered the necessary physical, technical and tactical training, 5 of them will be promoted in the national centralized training groups. This presupposes that they have fulfilled the proposed objective of obtaining the title of national champion and that they must subsequently confirm the results internationally. A new training cycle begins, for a period of 4 years - the duration of an Olympic cycle, during which time new goals are set, which must be confirmed at international competitions, and especially at European and world championships. After a much higher level of training, we assume that not all 5 athletes will have

the expected results and achieve their goals, but at least two or one of them will have a good result at European Championships, World Championships, Olympic Games.

This example shows that the work carried out during this period does not belong to a single coach in the respective section, but to a whole team of coaches, which involved a large basic selection, competition between athletes, which brought after that period the long-awaited result.

Conclusions

Management presents sport as an evolutionary component of modern social life, its own national and international structure with a specific material base and a large group of specialized technical staff, with organizational structures based on systems, laws, theoretical principles, national institutions and bodies, and international ones that aim at the realization of the biological, material and spiritual formation and improvement of the practitioners and participants in the sports activity.

Excellent management is achieved within a section within an organization, when the selection base for children and juniors is large, the appropriate number of specialists, the material base and adequate sports equipment, and compliance with the planning and training program according to the schedule lead to the proposed objectives and the achievement of sports performances.

Bibliography

1. Budevici, A. (2002). Filosofia sportului. Iaşi.
2. Iacob, I. (2002). Management în educaţie fizică şi sport. Iaşi.
3. Luca, G. (1993). Managementul general. Iaşi.
4. Nica, P. (1966). Managementul organizaţiilor. Iaşi.
5. Nica, P. (1997). Managementul resurselor umane. Bucureşti, Editura Economică.
6. Voicu, A. (1998). Managementul organizaţiilor şi activităţilor sportive. Cluj Napoca.

THE SPORTS ORGANISATION PERFORMANCE AND TRAINING BY MEANS OF MANAGEMENT CONCEPTS

Cernitoiu Cosmin[1]

[1] *State University of Physical Education and Sport, 22 Andrei Doga Street, Chisinau, Republic of Moldova*

Abstract

The analysis and evaluation of the training needs at organizational level implies the identification of the differences between what the sports institution expects and what happens inside it. This is, in fact, a diagnosis of current problems (differences between desired and current performance), potential problems involved in the process of organizational change (new performance factors, new methods of improving performance), individual development preferences (preferences of human resources, managers regarding their own development, as well as the development of their employees) of the target audience (staff in the organization that will be included in the training and development programs).

The purpose of this paper is the analysis of the training and development needs of sports organizations, a very complex issue in terms of understanding and incorporation by sports managers who empower their staff to act as agents of change at the organizational or competitive level.

Key words: *teambuilding, sports organizations, training programs, innovations.*

Introduction

Any important managerial action can be evaluated both from the point of view of success in terms of achieving immediate goals, and in terms of the effect on the sports organization's ability to approach change. Such actions contribute either to the accumulation of the main organizational values needed in the future or to their degradation. The involvement of human resources in the search for change creates a new way of life and, moreover, develops the ability of employees to produce more change, and consequently to be more productive.

The rationale for organizing training and development programs is to meet the needs of an organization (Vesnin, 1998).

The analysis of training needs at organizational level has a great advantage in the sense that it ensures the connection of training and development actions to the change strategy depending on the mission of the institution, which is a basic condition for success (Prodan, Budevici-Puiu, 2010).

It follows that a thorough knowledge of the connection between the strategic change plan and the training program to be implemented will have the effect of motivating sports managers to support a staff development activity focused, of course, on the motivation of their individual development. In order to carry out this analysis, we applied the sociological questionnaire of some categories of respondents, totaling a number of 90 (sports managers, coaches and employees of

sports organizations). The set of questions applied is reflected in Table 1.

The **purpose** of this analysis was mainly to find important data on the assessment of training needs at the level of a sports organization, the application of managerial principles focused on change and which can create many opportunities for development, participation and influence, with many people involved in the search for better and faster ideas with feedback that extends inside and outside it.

Results and Discussion

Regarding the question "Do you know what the analysis of training needs entails?", The categories of respondents mostly gave negative answers, which means the need to carry out training and development actions, as organizational strategies. In general, the analysis at the organizational level involves: identifying the objectives of the sports organization, the resources that can be trained for the training activity, including environmental constraints (legislation, political, economic and social) (Drucker, 2007).

Table 1 *Results of the sociological survey on the assessment of training needs*

No. crt.	Applied questions	Categories of respondents		
		Sports managers (n =45)	Coaches (n =30)	Employees (n =15)
1	Do you know what the analysis of training needs entails?			
	Yes	10 %	7 %	3 %
	Not	35 %	22 %	11 %
	Difficult to answer	5 %	4 %	3 %
2	Do you know the purpose of such an investigation at the organizational level?			
	Yes	8 %	6 %	3 %
	Not	26 %	19 %	9 %
	Difficult to answer	16 %	8 %	5 %
3	Do you know the stages of the analysis of training needs at the individual level?			
	Yes	17 %	11 %	6 %
	Not	23 %	15 %	9 %
	Difficult to answer	10 %	7 %	2 %
4	What is the role of managers in motivating staff in change-focused organizations and by implementing training programs?			
	Maximum	31 %	22 %	12 %
	Minimum	14 %	8 %	4 %
	Unimportant	5 %	3 %	1 %
5	Do you think that teamwork will			

	contribute to streamlining the activity of the sports organization Yes Not Difficult to answer	 38 % 8 % 4 %	 26 % 6 % 1 %	 14 % 2 % 1 %

Also, the answers obtained to the question "Do you know the purpose of such an investigation at the organizational level" were negative, namely sports managers - 26%, 19% - coaches, 9% - employees, which shows that respondents do not know that these investigations they can have the effect of discovering the objectives of sports organizations through training programs, being, at the same time, evaluated the openness to such courses, which could generate efficient results following the acquisition of the acquired knowledge.

Regarding the stages of the analysis of training needs at individual level, the categories of respondents answered, mostly, negatively: managers - 23%, coaches - 15%, employees - 9%. This reflects a clear staging situation of the training process, especially at the individual level, which must include an assessment of the individual's performance, compared to the standard one, of the individual behaviors necessary to achieve certain objectives and, finally, a general assessment of individual performance in accordance with the strategies of the sports organization.

Regarding the answers obtained after questioning the subjects in establishing the role of managers in motivating staff in organizations focused on change and by applying training programs, it is observed that they know the importance of managers (coaches), mobilization and motivation of individuals (employees, athletes) in order to achieve collective goals. This involves defining and communicating tasks, working in a team, grouping human resources, allocating them according to obligations and, finally, ensuring a beneficial treatment to carry out the activity in good conditions and quality. Also, the role of managers is essential in stimulating change focused on innovation, professionalism on the part of employees, in the direction of permanent streamlining of their skills through training programs.

The answers of the respondents to the question "Do you think that teamwork will contribute to streamlining the activity of the sports organization" are generally positive (managers - 38%, coaches - 26%, employees - 14%) and their activity at the organizational level must interact constantly, being needed effective collaboration skills, a capacity that can increase employees through training programs, reforming, thus changing the old existing structures.

The analysis and evaluation of the training needs at organizational level implies the identification of the differences between what the sports institution expects and what happens inside it. This is, in fact, a diagnosis of current problems (differences between desired and current performance), potential problems involved in the process of organizational change (new performance factors, new

methods of improving performance), individual development preferences (preferences of human resources, managers regarding their own development, as well as the development of their employees) of the target audience (staff in the organization that will be included in the training and development programs).

Conclusion

In conclusion, we can mention that the analysis of the training and development needs of sports organizations by applying managerial principles focused on change is of particular importance, as it can be a continuous process, whose fundamental objective is to respond to specific organizational needs, which the sports institution goes through and which can be materialized in training programs. Sports organizations that address change are open dynamic systems with many opportunities for participation and influence, with many people involved in the search for innovative ideas. Organizations, through change, seek to streamline the performance of the team (employees, athletes), by focusing on the outcome in institutional development.

Bibliography

1. Drucker, P. (2007). *Despre profesia de manager*. Meteor Press.
2. Moss Kanter, R. (2006). *Frontierele managementului*. Meteor Press.
3. Prodan, A., Budevici-Puiu ,A. (2010). *Strategia deontologiei specialistului de cultură fizică prin teambuilding şi training*. Chişinău: Valinex.
4. Vesnin, V.R. (1990). *Practical Personnel Management*: Manual on Personnel Work. Moscow.

BASIC PRINCIPLES FOR THE APPLICATION OF PHYSICAL FORCE IN DIFFERENT SECURITY AREAS

Șchiopu Gabriel [1], Popescu Darius-Liviu [2]

[1,2] *State University of Physical Education and Sport, 22 Andrei Doga Street, Chisinau, Republic of Moldova*

Abstract

A safe and secure environment requires the physical security of civilians (host nation and international), critical infrastructure, public forums, and key historical or cultural sites. Under this condition, civilians are largely free from persistent fear of grave threats to physical safety, including national and host nation leaders, international aid workers, returnees, women, and children. Protecting people and critical places is vital to preventing a renewal in violence and keeping the peace process and delivery of services on track.

Ensuring state security, as part of the purpose of the special investigation activity, is likely to be interpreted broadly, including the system and principles of organization and operation of the entire national security system and state security bodies.

Key words: *security, principles, physical strength.*

Introduction

The basic principles in the application of physical force by the security guard represent the totality of the rules of action and professional conduct of which it is strictly necessary to conduct a security guard in relation to the citizens in order to perform correctly and fully effectively the actions of stopping, stopping and the annihilation of all forms of physical aggression.

The knowledge and observance of these principles will contribute to ensuring the legality of the actions taken, the successful realization of the functional competencies, as well as to ensuring the personal security of the security agent (Silion, 2008).

Therefore, the application of physical force by the security officer is determined according to the circumstances of the actual situation, the type and degree of danger, as well as the individual characteristics of the person against whom it is to be applied, in compliance with the following principles.

1. The principle of legitimacy

The principle of legitimacy regulates the mode of action of security agents (in accordance with the law on the application of physical force) in some difficult situations where it is necessary to intervene in improving and normalizing altercations with citizens by presenting the competence and acts confirming it. Citizens will not be restricted and will only be subject to the restrictions established by law and the natural requirements of social morality.

Thus, the security agents being in the situation of committing a violation of the law by one or more aggressors, which justifies the application of physical force, has the obligation to appear and decline their competence, and when they are in civilian clothes, to additionally presents the service card (Dougherty, 2014, Silion, 2008).

2. The principle of proportionality

For the security guard's defense against an attack to be considered legitimate, there must be an approximately proportional relationship between the act committed in defense, on the one hand, and the attack that provoked the need for defense, on the other hand (Gratii, 2003, Scobioala, 2006).

Physical force must be used by the security guard only when strictly necessary in law enforcement and the application of force must be proportionate, ie force must be applied only to the extent necessary for law enforcement. The concept of proportionality will be applied starting with the minimum force, and where it is necessary to raise the level depending on the evolution of the situation. The condition that the defense be proportionate to the aggression must be considered both in relation to the seriousness of the danger and to the circumstances in which the attack took place. The determination of the gravity of the danger is made in relation to the real circumstances from the moment of the aggression and not according to abstract criteria. Given the real value of the object of the defense and the concrete situation in which the attacked person was, a fair conclusion can be drawn regarding the gravity of the danger created and the possibilities of defense.

The circumstances of the attack must also be taken into account in determining the proportion between the attack and the defense, as some of them may increase the severity of the danger, which justifies a more intense defense with more vigorous means on the part of the attacker. Such circumstances can be an attack during the night, after previous threats, the drunkenness of the aggressor or the state of illness of the attacked, the existence of several aggressors, the isolated place (open field, deserted street) where the attack takes place, etc. (Grosu, 2005, Ionescu, 1972).

Therefore, the proportionality of the defense is to be analyzed in relation to the gravity of the danger to which a person is exposed, with the concrete circumstances of the cause in which it enters as a determining factor and the real possibility of the attacked to face the attack.

3. The principle of graduality

The principle of gradualness provides for the progressive and differentiated approach of the situation by the security agent in relation to the intensity and the level of risk of the hostile action of the aggressor. Bringing together principles such as: minimum risk, gradual use of methods and means of action, limitation and proportionality of the use of force, the concept of gradual intervention is a continuation of coercive measures, which materializes in an evolution that begins

with the mere presence of the security guard, continues with the use of technical means of force intervention and ends with the use of equipped weapon.

The gradual application of physical force by the security guard includes the phases that reflect the proportionality between the attitude of the opponent (calm and cooperative or aggressive, even violent) and the degree of coercive measures applied by the security guard.

The main objective is to dominate the aggressor through verbal and non-verbal communication, through deterrent actions, and if they do not have the expected effect, the use of body techniques is followed, followed, as appropriate, by the use of technical means, directly proportional to the degree of threat. Through this gradual (evolutionary) approach to the application of physical force, an attempt is made to acquire a mental and tactical advantage, so that the security agent has the opportunity to strengthen his response, thus putting himself in a position to resolve tactfully and effectively face. However, the application of physical force against an opponent or for the accomplishment of a mission is done gradually (Gratii, 2003, Scobioală, 2006).

4. The principle of limitation

The principle of limitation provides for the application of physical force by the security guard as long as is necessary to obtain control of the aggressive situation. After consuming the attack or after immobilizing the aggressor, any action by the security agent that leads to his injury is exceeding the limit of legitimacy. Thus, physical force will be used as needed: the application of special blows or combat procedures will cease as soon as the aggressor has given up his action, complied with the instructions given by the security guard, or with the disarming and immobilization of the aggressor.

During the attack, a situation may arise in which the aggressor is disarmed and knocked to the ground or tries to flee, in which case it can no longer be an ongoing attack. The actions taken by the security officer after this time are considered to have been carried out after the attack was completed, as it was out of any danger. In this sense, it was decided in judicial practice that there is no legitimate defense, when the aggressor was disarmed and tried to escape by fleeing, and the one who had been attacked pursued him and inflicted a serious or even fatal blow on him (Botnaru, 2005, Dolea, 2005).

But it can happen that, although unarmed, the aggressor does not give up his initial intentions and, even without the object that served as his weapon, he continues his aggressive acts to regain control of the weapon and use it for his aggressive purposes or to use for these purposes means other than the weapon from which it has been dispossessed. In this case, the defense will be considered to have taken action to remove an ongoing attack. However, it should be borne in mind that the aggressor, although carrying on his aggressive action, being unarmed, finds himself in a situation inferior to his initial position, which may make the action less dangerous than it had been while he was armed. In such circumstances, in order to

be legitimate, the acts of defense must be proportionate to the degree of intensity of the aggression, the force triggered by the aggressor in the continuation of the attack, and the means that he still uses.

5. The principle of minimum risk

The principle of minimum risk provides for ensuring the security of the security guard, minimizing the consequences of using force on suspects / aggressors. The principle of minimum risk for both the aggressors and the security agents consists in choosing the most appropriate means of intervention in force, in order to avoid as much as possible the damage to the bodily integrity of the persons against whom action is taken. At the same time, the principle also involves ensuring the protection of the security agent, even if the person was acted upon by force, for the application of the law. This refers to the provision of first aid in case of injury to bodily integrity or health, non-recourse to violence or ill-treatment of detainees.

In case of extreme necessity, the use of the weapon is made by the security officer so as to lead to the immobilization of those against whom the weapon is used, pulling, as far as possible, to avoid their death.

The use of physical force, special means against women with visible signs of pregnancy, minors, the elderly and persons with obvious signs of disability is prohibited, except when they oppose armed resistance, when they commit a group attack, an attack armed or perform other life-threatening actions.

At the same time, the collaborator of the forces of force and security will refrain from the application of physical force if as a result of this action foreigners may suffer.

6. The principle of non-surprise

The principle of non-surprise provides for the summons and the announcement of the imminent use of physical force by the security agent on the aggressors. The application of physical force and combat procedures 26 hand-to-hand by security agents is done only after warning and summoning those involved in aggressive actions, after summoning those who are violent to stop the aggressive action and submit to the request of the security guard. No summons is required if the security guard is attacked by surprise or the bodily integrity of any person is immediately endangered.

7. The principle of non-discrimination

This principle requires security agencies to behave in a fair, impartial and non-discriminatory manner, regardless of race, sex, sexual orientation, religion, nationality, political affiliation, beliefs, wealth or social origin, disability, age, towards all citizens. Being at the heart of human rights activities, in particular, they need to know the principles of non-discrimination in order to be able to implement them effectively, precisely because the provisions on non-discrimination are effectively implemented at national level and precisely because here, on the spot, the challenges become visible.

This principle stipulates that people in similar situations should receive similar treatment by security agents and not be treated less favorably only because of a certain "protected" characteristic they have (race or ethnicity). This is known as "direct" discrimination. Examples include: refusal to allow entry into a state or private building, restaurant or shop, verbal abuse or violence against a person, refusal of access to a checkpoint, ban on wearing religious symbols, etc. (Gratii 2003, Grosu 2005, Catană, 2006).

Second, the law on non-discrimination provides that those in different situations must be treated differently to the extent necessary to enable them to take advantage of certain opportunities in the same way as other persons. Thus, the same "protected criteria" must be taken into account when carrying out concrete practices or creating concrete rules. This is known as "indirect discrimination".

8. The principle of inviolability of the person

This principle establishes that every person has the right to respect for his life, physical and moral integrity, as well as the attributes inseparable from his personality. This principle includes the prohibition of torture or ill-treatment of detained or detained persons.

The military or security agents have the right to detain the aggressor or the person suspected of committing a crime in the following cases: 1) if this person was caught on the fact or immediately after committing the crime; 2) whether the eyewitnesses, including the injured party, will show directly that the given person committed the crime; 3) if obvious traces of the crime will be found on the body or clothes of the suspected person. If other circumstances give reason to suspect that this person committed the crime, he can be detained only if he tried to flee or has no permanent residence, or his identity could not be established (Catana, 2006).

The circumstance "if it was caught in flagrante delicto" presupposes the situation when the need for detention arose spontaneously in connection with the commission of a flagrant crime. In this case, the detention by the security guard shall be applied in order to establish the identity of the suspect, to obtain means, evidence and to ensure the presence of the suspect in carrying out the necessary criminal prosecution.

Conclusions

In **conclusion**, we can mention that the in-depth study of the basic principles is dedicated to the development of effective practices, regarding the training of physical abilities, which has the axis of supporting the graduality of the intervention and which we hope to ensure a correct service for all any nature and practices that are inconsistent with the ethics and deontology of the security agent profession.

Bibliography

1. Catană, E, Dolea, I. (2006). *Inviolabilitatea persoanei în Republica Moldova*. Chișinău: Institutul de Reforme penale. 97 p.

2. Gratii, V. (2003). *Aspecte instructive privind folosirea şi aplicarea forţei fizice, a mijloacelor speciale şi a armei de foc de către funcţionarii poliţiei în asigurarea ordinii de drept şi combaterea criminalităţii*. Chișinău.
3. Grosu, V. (2005). *Drept penal. Partea specială*. Chișinău: Editura Cartier, SRL. 804 p.
4. Scobioală, G. et al. (2006). *Instrucțiuni privind tactica specială a măsurilor de intervenție a subdiviziunilor OAI.* Chișinău: Tipogr. Elena –V.I. 54 p.