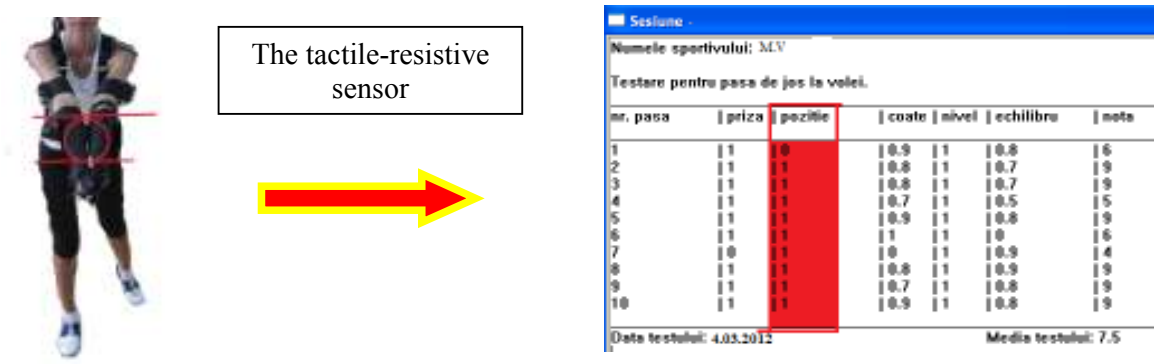

Fig. 1.Application session- Testing session- Ball position on the player's forearms

By comparing the first execution to the others in the testing session, it is to be remarked that the grip was accurate (1), the elbows were perfectly aligned thus scoring high (0.9), the same as the above-shoulder level (1) and balance (0.8), but the ball position (contact) on the forearm was wrong (0). In this case the apparatus sends the vocal message: "Use the arms' third part!".

CONCLUSIONS

By analysing the real-time statistic data provided by the apparatus, it may be said that most subjects said that besides the hitting force and the friction, the unequal joint mobility of the player's arms may be a cause of the different force ratio on the player's forearms.

under research do not show balance on both arms at the moment they hit the ball. Thus, some players rely more on the right arm, while others favour the left.

This arm imbalance leads to passing in an imprecise area, even if the other methodological requirements have been met.

In point of the statistics of the working stage called arm work (execution 6 in Fig. 2), it may be

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CULTIVATING GENERAL STRENGTH TO JUNIOR 12-13 YEAR-OLD SOCCER PLAYERS

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Abstract

Strength is the basis of all other motric capacities.The aspects presented in the literature of specialty emphasize the fact that the muscular development at early ages requires special attention in conceiving the exercises. In this respect, through our experiment, we have conceived a training programme meant to develop the general

strength of the 12-13 year-old soccer players.We have considered specific requirements, depending on the characteristic features of the body in full growing up process.
Keywords: *cultivate, general strength, children, soccer*

INTRODUCTION

According to the opinion of various experts, (Bosco C.-1985, Cometti G.-1988, Iaric S.-1985, Firea E.-1984, Verhoshanski L.V.- 1987), quoted by Niculescu M., Malusaris G., Mateescu A., in 2008 strength was and continues to be the main motor quality that allows the improvement of the indices of other qualities and can be developed in simple conditions, without great expenses.

Strength is defined as,, the ability to overcome the external resistance or to resist it with the help of the muscular effort"(Novicov A.D.-1980). Weineck J. sees strength asthe ability to achieve overcoming, maintenance or give in efforts of external or internal resistance, through the contraction of one or several muscle groups.Tudor Bompa in 2002 points out the importance of this quality in executing movement defining it as „ the neuromuscular capacity to overcome an external or internal resistance" or in simple terms, strength is the capacity to apply strength.The literature of specialty presents a series of definitions that are not essentially different, but in the synthesis papers the emphasis is on the muscle effort meant to overcome resistance. The authors who have approached this motor skill, depending on their profession – physicists, physiologists, experts in Physical Education and Sports Methodology, biochemists, biomechanists discuss and present a series of manifestations of strength.According to the degree of generality and the performed activity, one can speak about general and specific strength.

General strength, the subject of our study, represents the body's overall capacity to overcome various resistances, based on the contraction of the main muscle groups (Rata G., Rata B.C., 2006), quoted by Niculescu M., Siman I., Mateescu A., in 2008. According to Dragnea A., 2006, general force is usually required by the individual's daily activity.Zatiorski(1968), quoted by Bompa Tudor in 2001, considers that the size of the strength is a function determined by three factors: intermuscular coordination, intramuscular coordinationand the strengthof the muscle response to the nerve impulse.

According to Bompa T., Carrera M., (2006)any strength training programmemust use the 6 training fundamental laws in order to ensure adaptation and to avoid injury. This fact is particularly important for the young athletes; - develop joint mobility; - develop ligament and tendon strength; - develop middle body strength; - develop stabilizer muscles; - train movements not muscles; - focus on what is necessary, not new.

PROBLEM STATEMENT

Most of those who are against the practice of strength exercises by children imagine tens of kilograms ofweight pressing on children's articulations and bones, that are in full growing process at this age, causing serious disturbances to their bodies. It is true that the use of big weights produces damage to a child's body, but it is also true that the use of small weights, combined with mobility games and exercises help the development of the general strength. According to Corobcov (1962), quoted by Niculescu M., Malusaris G., Mateescu A., in 2008, the increase in muscle strength up to the age of 11 is rather insignificant. Starting with the age of 12, the rhythm of muscle strength development increases, reaching its highest intensity at 18 years of age. The same author proves that the functional potentialities of man's various muscle groups develop differently.Some muscles develop considerably at the age of 10-13 , others at 15, and the maximum muscle strength increases from 13 to 14 up until16-17 years of age.

One of the main targets of our training programme for children and junior players is the development of a strong anatomical basis. Nevertheless, the literature of specialty recommends methods that have not always reached their goal, and the content of the strength training in the school curiculum does not lead to the best results, and thus, generations of players remain deficient thereat.

PURPOSE OF STUDY

The purpose of the study is to design a programme specific for the development of general muscle strength to children involved in performance activities, soccer, 12-13 years old.

Hypotheses of the study :

1.To what extent the muscle development exercises have influencedthe motor quality conditioned by strength.

2. Whether the proposed working programmecontributes to the cultivation of general strength to 12-13 year-old players.

METHODS

In order to fulfill the purpose and reach the aims of the study, we have used the following research methods :

- *The* ***Scientific Documentation (bibliographic)*** including a wide range of information, tackling special studies from the country and abroad, scientifically substantiating the topic addressed in the study.

- The Pedagogical Observation. Observation must be objective, continuous and systematic. The acquired data are recorded, classified, processed

and conclusions are drawn. The data collection has been helpful for a preliminary analysis in choosing the appropriate means for the experiment achievement.

- The Testing and Measuring Method. The measuring and testing were intended to point out the evolution of the proposed experiment. The two groups of players were subjected to a number of 4 tests targeting the determination of the general strength development. They are the following :

***1.*Pull-ups**

MATERIAL: fixed bar or a similar object

EXECUTION:The player is hanging on the bar, palms facing away, he flexes his arms, pulling himself up until his chin is above the bar, then returns to his initial position, ARMS UPSTRETCHED !

PRACTICAL ADVICE: In order to avoid balancing that can be produced during the exercise, it is advisable to have a partner placed laterally, stretching his arms on both sides of the legs !

EVALUATION:The coach (or partner) counts how many times the player has succeeded to raise his chin above the bar.

PENALTIES: No point is granted if :

-the movement is partially executed (bent elbows at the beginning, chin under the bar);

-the body remains immobile during execution (no balance, no leg pushing).

ATTEMPTS:one

***2.*Long jump without momentum**

MATERIAL: tape measure

INSTALATIONS: Atape measure is fixed on less hard ground (gymnasium, turf, running track etc).The startingline must me marked by a line (e.g..: the end line of a field –inside or outside). This line must be perpendicular to the tape and must not be touched by players, neither before, nor during the jump. The „zero" point of the tape is fixed on theedge of the line that is closest to the player.

EXECUTION: The player must jump, holding feet together, as far as possible, without momentum.

EVALUATION: The leap is measured by centimeters, from the outer edge of the starting line to the most backward point of the landing place.

PENALTIES: The jump is null if :- the player executes one or more standing jumps before the leap;-the player steps on the starting line.

ATTEMPTS: 3, the best is recorded

3.Throwing a rounders ball from a standing position

MATERIALS:the starting line for the throw, traced by the teacher, a rounders ball, tape measure.

EXECUTION:The player is standing behind a traced line, from the standing position, legs apart, the foot opposite to the throwing arm placed forward, he throws the rounders ball as far as possible.

EVALUATION:The coach shall record the best result in meters.

ATTEMPTS:The player can try 2 times

***4.*Flexions of the body without prop or aid**

MATERIAL: 1 stopwatch

EXECUTION:Starting position: supine position, legs stretched, hands on the back of the neck.

On command, the player flexes his trunk forward and touches his right knee with his left elbow, which has also been flexed, the left foot being kept stretched on the ground. When reverting to the supine position, the hands on the back of the neck must come into contact with the ground, the right leg reverts to its stretched position, on the ground. The pelvis remains against the ground.The player combines alternatively left elbow–right knee, right elbow –left knee.

ATTENTION: the sole of the flexed leg must be against the ground when the opposite elbow touches its knee.

EVALUATION: We count one every time an elbow comes into contact with a knee for 30 seconds.

PENALTIES:NO POINT IS SCORED:

-if movements are executed partially or completely incorrect,

-if the pelvis is off the ground,

-if the elbow does not touch the opposite knee,

-if the sole of the flexed leg is not on the ground during the elbow-knee contact moment,

-if the attempt is interrupted (pause greater than 3 seconds).

ATTEMPTS: one

-The Pedagogical Experiment was based on the confirmation of the working hypotheses concerning the cultivation of general strength to 12-13 year-old soccer players

The groups involved in the study are the following :

- Experimental group: F.C.M.Dunărea Galați –D junior players, 28 in number
- Control group: Otelul Galați –D junior players, 28 in number

Organisation of the study :

This study toook place during a competition (August 2012- December 2012) and it included:

-Organisation and deployment of tests.Periodisation of the tests included in the study:

1- initial testing – during1-5 August 2012, in order to identify the initial values of the studied parameters;

2- final testing – during16-20 December2012.

The experimental programme

The experimental group worked on a weekly schedule, 2 days per week: on Tuesday andThursday, from 18.00 to 19.00 hrs at the gym of the FCM Dunarea Galati club.

Among the means of developing the muscles to the 12-13 year-old players in the control group we can mention: work with a partner, without a directed

content, at the beginning and the final part of the training session.

Muscle-building exercises for different goups of muscles working alternatively.The circuit shall be repeated twice.4 minute breaks between the series of exercises.

Exercise no. 1

From the standing position, keeping his chest straight, the player goes up and down, in four strokes, on a 30- 40 cm tall bench,carrying a light 1 kg dumbbell in each hand, 12-14times. 30 sec break.

Exercise no. 2.

From supported prone position, one pushup, then pass to squatting position, hands on the ground, then revert to the initial position. Practice for 8-10 times. 30 sec break.

Exercise no. 3.

From supine position trunk and legs are flexed simultaneously, grabbing the knees with the hands (grouped sitting position). Revert to initial position. Practicefor 10-12times. 30 sec break.

Exercise nr. 4.

Standing jumps are performed, using the rope, and advancing slightly, 30 s. 45 sec break.

Exercise no. 5.

Stretched standing position, inward arm rotations, with light dumbbells (1kg). in each hand.Practice for 12-14 times. 30 sec break.

Exercise no. 6.

From prone position, arms up, carrying a soccer ball in one□s hands, trunk extension. Practice for 12-14 times. 30 sec break.

Exercise no. 7.

Standing on an inclined plane, carrying a light 1kg dumbbell in each hand, the player bends his knees until he touches the inclined plane with his buttocks, then reverts to the initial position.Practice for 10-12 times. 30 sec break.

Exercise no. 8.

From supported supine position, hands on the gym bench, bend and stretch arms. Practice for 10-12times. 30 sec break.

Exercise no. 9.

From supine position, simltaneously lift legs close together, and then bring them in the initial position. Practice for 10-12 times. 30 sec break.

-The Mathematical and Statistical Method .Data were collected according to the established purpose and then they were processed, so that the information attesting the veracity of the experiment was obtained in an appropriate statistical form. The statistical processing of the registered results has been achieved by the use of Microsoft Office Excel 2007.

-The Comparative Method was used to compare the assessments regarding the selection of the most effective exercises and their verification for a correct practicability

-The Graphical Methodt hat emphasizes the evolution of the results of the studied period, the progressor regress of the subjects and of the team.

FINDINGS AND RESULTS

After having ***designed and applied the experimental training curricula***, in order to cultivate general strength to 12-13 year-old soccer players, the results demonstrate the provision of muscle building to 12-13 year-old soccer players, too. We have identified means used in implementing the muscle development under the influence of the controlled experiment.

The differences between the experimental group and the control group in terms of performance have been tested using the *t test for two independent groups*.

Initially, there has been no significant performance difference ($p>0.05$); this was, in fact, one of the prerequisites for the achievement of the experiment. Nevertheless, at the final testing, **there have been significant differences between the two groups, statistically speaking** ($p <0.05$).

For the pull-up test, the average performance of the experimental group athletes (6executions) has been significantly better than the average performance of the control group athletes (4,6 executions), and the coefficient of variation evinces homogeneity, compared to the control group.

For the long jump without momentum test, the average performance of the experimental group athletes (1.74cm) has been significantly better than the average performance of the control group athletes (1.67cm).

For the rounders ball throwing test, the average performance of the experimental group athletes (29.57m) has been significantly better than the average performance of the control group athletes (25.07m), and the coefficient of variation of the experimental group evinces homogeneity, compared to the control group.

For the body flexion test, the average performance of the experimental group athletes (23executions) has been significantly better than the average performance of the control group athletes (19executions), and the coefficient of variation of the experimental group evinces homogeneity, compared to the control group.

The discussed results are illustrated in the summary table of the statistical tests and the charts of the averages that are hereinafter presented.

Table 1 Summarizing table of the results evolution for the two groups included in the study

Grupa	Experiment		Control		Experiment		Control		Experiment		Control		Experiment		Control	
Test	I	F	I	F	I	F	I	F	I	F	I	F	I	F	I	F
Sum ∑	82	168	84	130	45	49	45	47	574	828	571	702	420	644	420	532
Arithmetical average	2,928	6	3	4,642	1,601	1,7407	1,617	1,677	20,5	29,571	20,39	25,071	15	23	15	19
Standard deviation	0,813	0,816	0,816	0,731	0,072	0,071	0,077	0,063	1,5752	0,92	0,916	1,653	1,21	1,217	1,217	1,586
Coeff.of variation%	27,769	13,608	27,21	15,74	4,501	4,124	4,805	3,78	7,684	3,111	4,494	6,596	8,11	5,292	8,114	8,35255
average error m	0,153	0,154	0,154	0,138	0,013	0,013	0,014	0,011	0,297	0,173	0,173	0,312	0,23	0,23	0,23	0,3
m^2	0,023	0,023	0,0238	0,019	0,00019	0,0001	0,0002	0,0001	0,088	0,03	0,03	0,097	0,052	0,052	0,052	0,09
Testt signif. T		14,099		7,93		7,26108		3,145		26,304		13,089		24,58		10,58
Test	Pull-ups				Long jump				Trowing a rounders ball				Flexions of the body			

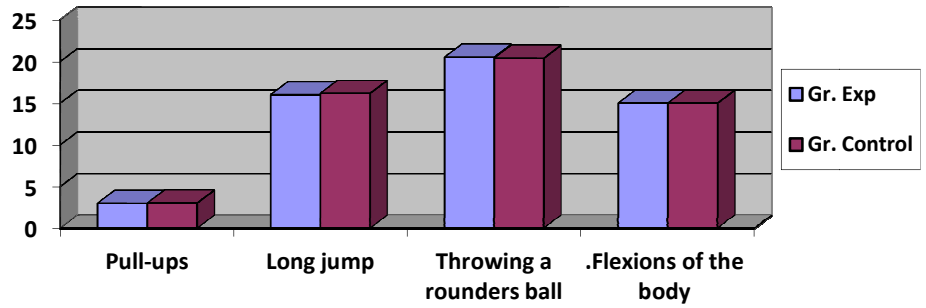

Fig.1 Diagram on the arithmetic mean of the initial test results of the two study groups

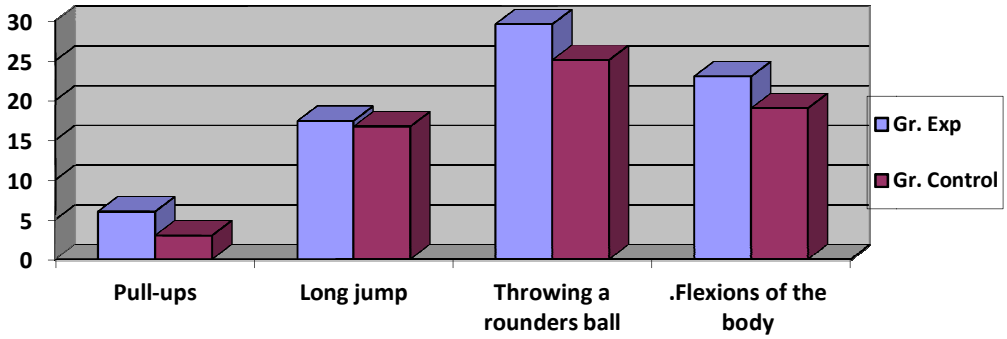

Fig.2 Diagram on the arithmetic mean of the final test results of the two study groups

CONCLUSIONS AND RECOMMENDATIONS

The conducted study confirms the hypotheses of the research, emphasizing through the recorded values, the level of development of the general muscle strength to the soccerplayers in the experimental group, compared to those in the control group.

The sports training must permanently ensure a harmonious physical developmentthrough continuous increase in the motor capacity, especially under the conditions of intense school activities that require greater efforts every year. When the used methods and means are easy to execute, attractive, optimally distributed and standardized, all these a spects lead to a significant development of the motor capacity, fact whichis the main target of the sports training.It has been found that a soccer player needs a certain specific strength, but this could not be developed if the player does not acquire general strength first, which is the one that engages all muscles of the body. Consequently,the strength training is one of the most important ingredients in the athletes' development programme.

Recommendations for the practical activity, following the experiment and the gained results:

-exercises must be simple and accessible.

-select a great number of exercises (8-12), that engage the main muscle groups
- exercisesmust alternate between limbs and muscle groups to ensure a good recurrence.
- the relaxation exercises, like shaking legs, arms and shoulders, quicken the recurrence between series.

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EXPERIMENTAL STUDY ON THE DEVELOPMENT OF COORDINATION CAPACITY OF FOOTBALL PLAYER S BY MEANS OF DANCE

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Abstract

Coordination represents a major complex capacity, decisive in achieving and improving technique and tactics, as well as in applying them under unusual conditions. Many consider that coordination is an inherited trait, that can nevertheless be considerably developed, especially if the training for this purpose starts during childhood.
A successful programme for the coordination development must be based on acquiring a great variety of skills. New activities have been experimented in this respect, in our case skills of the samba dance.

Keywords: *soccer game, junior players, coordination capacity, samba dance*

INTRODUCTION

Practical activity proves that the best results, for any type of sport or any sports test, cannot be obtained only by using their specific means, as the features of the multilateral physical training are borrowed from other sports and adapted to what we intend to do, in order to increase sports performances.

In training the soccer players, particularly the young aged, methods from other sports are used (athletics, gymnastics, weightlifting, ice-skating, swimming, dancing etc.) methods that can contribute to an increase of the technicity indices of exercises, to an improvement of the motor qualities and an extension of the athletes' motor, functional and movement abilities. Many authors (Dragnea, A., Mate-Teodorescu, S., 2002; Ploeşteanu C., 2003; Nanu L., 2010) consider that, by limiting the influence of the physical training indices strictly to the acquisition of technical and tactical actions for the sport involved, we accept mediocre results.

Tudor Virgil (1999) considers the general coordination capacity is the result of a *„polyvalent motor learning"*. With respect to the coordination capacity, he states that it is one of the motor qualities which designate collection of skills, mainly psychomotor, that involve a rapid and effective adaptation to various conditions, specific to the various types of activities, through the reorganization of the existing motor background.

The reorganization of the existent motor skills of the 8-10 year-old players may also be achieved by including dance methods in the general physical training, determining a general increase of the