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Correction of Faulty Attitude and of Physical "Kyphosis" in Children Using Specific Means of Gymnastics and Swimming

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Abstract

This work aims to submit a complex programme of specific means of gymnastics and swimming for the purpose of correcting posture and rectify spine Kyphosis in children (12-14 years old) as the number of people suffering from obesity is getting higher and their sedentary lifestyle has become one of the characteristics of the daily life. Doctors warn that more and more children weigh more than normal since they show no desire to practice a sport and prefer the TV or the computer as ways of spending spare time. The lack of any physical activity shall be reflected in the deficiencies in the physical development, particular in the spine. The main purpose of this research is the improvement of the detailed rules for the application of some specific exercises in gymnastics or swimming in order to correct the kyphotic attitude and to rectify kyphosis.

Keywords: deficiencies physical, specific means, swimming, gym

Introduction

The correction of the attitudes and physical shortcomings in the aquatic environment and on land is a problem of topical interest, taking into account the small number of specialized publications in this field. A series of physical deficiencies are well-known and there is a longing for positions of the body to be influenced by beneficial swimming and gymnastics specific exercises. Explaining the purpose of these exercises, using the means and methodical indications of the actuator in water and on land, I watched the standing committee compliance with the principle of hippocratic "primum non nocere".

The exercises are arranged in an easy and accessible form, knowing their influence over the musculo-skeletal system, cardiovascular disease, respiratory, the nervous system and metabolism. The implementation of these programs in water and on land means for those interested useful models and sources of inspiration (Mergheş and Țeghiu, 2006).

Objectives of the research:

- general body tonification;
- a better toned spinal in the dorsal area;

- formation of stable reflex of attitude and a correct straight position of the body;
- toning in conditions of shortening of the muscle groups from the dorsal area of the trunk;
- toning in conditions of lengthening of the muscle groups (of chest);
- preventing the installation of a compensatory bends lordotics;
- the correction of the attitudes of the deficiencies of the shoulder, thorax, basin, the lower limbs, head and neck, accompanying kyphosis (correct alignment of the segments);
- development of respiratory function.
- establishment of the risk factors at this level of development and bio-physical particularities of the organism children (12 to 14 years).
- development of the models in the, with a view to the application of the specific means of gymnastics and swimming.
- scientific argument forthe implementation of the models of specific exercises and gymnastics.

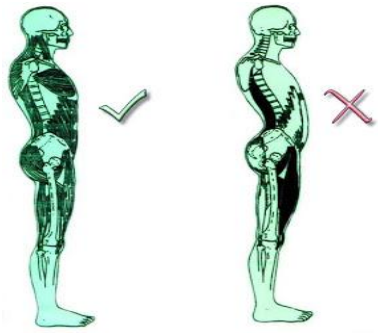
Hypothesis of the research:

Development of multiple forms for the application of the physical exercise creates the possibility to improve the state of health of the human body. In this respect it is to be assumed that, by the application of the combined specific means of gymnastics and swimming, the correction of the attitude and the physical rectified kyphosis in children (12-14 years) can be achieved.

Motivation and premises of the choice of grounds:

In the past few years the physical health of children is threatened by sedentary lifestyle, obesity, insufficient food or improper operation. All these contribute to the decrease of the physical vigor and resistance to disease. From these considerations we can see that the specific means of gymnastics and swimming contribute to a large extent to improve the state of health of its development from the point of view of the operational aspects, driving psihomotrice, and psychological of children, creating the premises for the correction of faulty posture and the physically rectified kyphosis in children (12 to 14 years).

Kyphosis is a deviation of the spine in the plan to the antero-posterior, with the convexity of the bending located in the dorsal plan. Depending on its amplitude, kyphosis is short, medium and long. Short kyphosis is below the angular shape and comprises only a few spine; average kyphosis comprises an entire region of the vertebral column (dorsal, lumbar), and the long in the curvature of the entire spine (Sbenghe, 1999).



Research subjects:

For the verification of the assumptions of the work, 12 subjects presenting attitude and physical deficiencies of the spine, aged between 12-14 (Table 1) were selectedto participate in the study.

Table 1. Characteristics of the batch of subjects

	First and last names	Gender	Age	Occupație	Condition
1	R.A.	F	14 years	student	Kyphotic At.
2	S.A.	F	13 years	student	Kyphotic At.
3	M.A	F	12 years	student	Kyphotic At.
4	B.I.	F	14 years	student	Kyphotic At.

5	A.C.	F	13 years	student	Kyphotic At.
6	M.M.	F	13 years	student	Kyphosis
7	F.S.	F	14 years	student	Kyphosis
8	I.M.	M	12 years	student	Kyphotic At.
9	P.G.	M	13 years	student	Kyphosis
10	B.M.	M	14 years	student	Kyphotic At.
11	G.D.	M	14 years	student	Kyphosis
12	S.D.	M	14 years	student	Kyphosis

Table 2. Anthropometric measurement of the batch of subjects

Nr. Crt	First name and last name	ANTHROPOMETRIC MEASUREMENT											
		Height		Weight		The chest area							
						In repose		In inspiration		In exhale		Elasticity	
		Ti	Tf	Ti	Tf	Ti	Tf	Ti	Tf	Ti	Tf	Ti	Tf
1	R.A.	1,67	1,68	41	43	73	74	76	79	72	70	6	9
2	S.A.	1,66	1,67	58	60	97	98	99,5	101	97	96	2,5	5
3	M.A.	1,58	1,58	45	46	76	77,5	83	85	75	76	9	9
4	B.I.	1,6	1,65	46	49	79	81	81	83	77,5	76	2,5	7
5	A.C.	1,55	1,55	42	41	78,5	78,5	82,5	83	78	77,5	4,5	5,5
6	M.M.	1,54	1,54	51	52,5	94	94	95,5	96	92,5	91	3	5
7	F.S.	1,65	1,65	58	59	95,5	97	98,5	100	93,5	92	5	8
8	I.M.	1,61	1,63	41	42,5	73	75	79	80	70	70	9	10
9	P.G.	1,6	1,62	59	60	90	90	93	94	86,5	86	7,5	8
10	B.M.	1,66	1,66	60	62	84	85	88	89,5	80	80	8	9,5
11	G.D	1,73	1,75	74	76	102	104	104	105	99	98	5	7
12	S.D.	1,79	1,80	82	83,5	102	103	107	109	101	100	6	9
13	∑	19,6	19,78	657	674,50	1044	1057	1087	1105	1022	1013	68	92
14	X	1,64	1,65	54,75	47,8	87	81,8	90,58	86,2	85,17	79,1	5,667	7,1
16	S(±)	0,07	0,08	13,16	13,3833	11,03	10,98	10,4	10,24	11,08	10,83	2,348	1,762
17	Cv	4,26	4,84	24,07	28	12,68	13,42	11,48	11,88	13,01	13,69	41,43	24,81

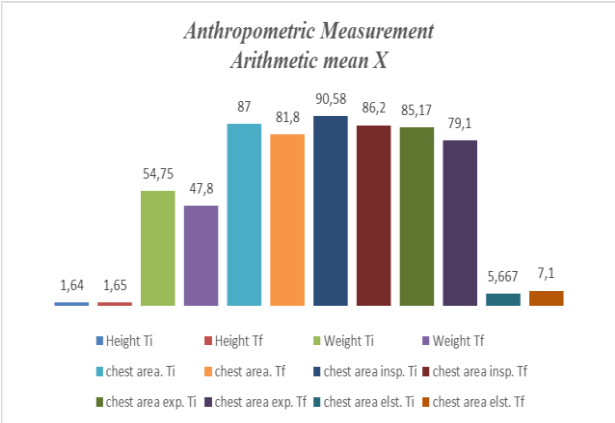


Figure 1. Arithmetic average to initial and final tests for anthropometric measurements

Table 3. Spine mobility of the batch of subjects

First name and last name	THE SPINE MOBILTY							
	Bending the spine		The distance fingers to ground		Bending the side of spine			
					left		right	
	Ti	Tf	Ti	Tf	Ti	Tf	Ti	Tf
R.A.	5	2	-2	2	25	24	27	25
S.A.	8	5	0	3	20	18	20	19
M.A.	4	1	-3	0	24	23	27	25
B.I.	6	2	-5	-2	26	25	26	24
A.C.	4	0	2	6	17	14,5	18,5	16
M.M.	8	3	-1	3	21	20	18	15,5
F.S.	11	8	4	9	23	18	20	19
I.M.	7	4	-3	4	16	13	17	17
P.G.	9	5	-4	1	22	19	20	18
B.M.	5	2	-8	-5	13	10	16	15
G.D	7	3	4	0	18	15	14	12
S.D.	5	3	0	2	25	25	28	26
∑	79	38,00	-16	23	250	224,5	251,5	231,5
X	6,58	3,17	-1,33	1,92	20,83	18,71	20,96	19,29
S(±)	2,15	2,12	3,60	3,63	4,11	4,94	4,81	4,63
Cv	32,67	67,03	270,14	343,78	19,72	26,40	22,94	24,02

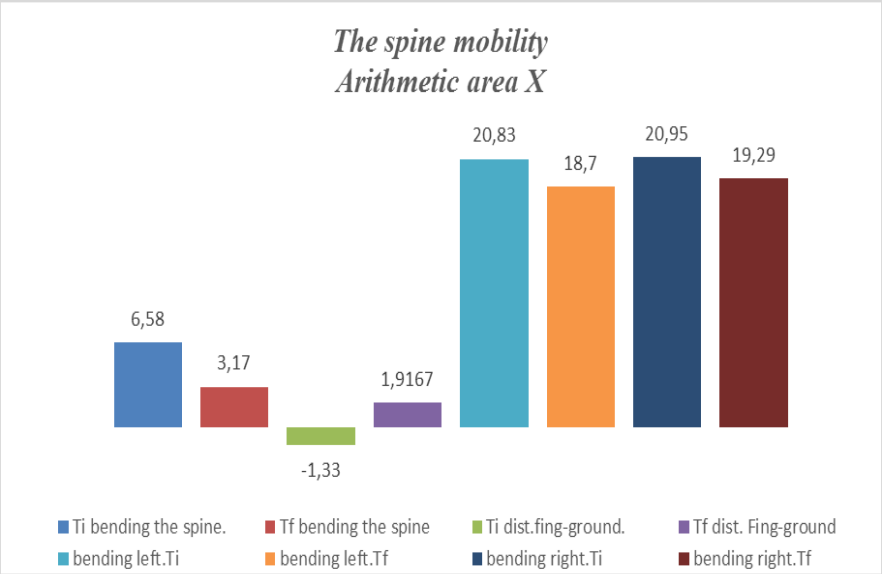


Figure 2. Arithmetic average to initial and final tests for spine mobility

Stages of research:

The research activity has been carried out in several stages as follows:

Stage I - in this stage it was made theoretical documentation by exploring the literature. Attention was focused on the way in which specialists address correction of the attitudes and physical deficiencies.

Stage II –in this stage methods of exploration and evaluation were applied for the purposes of observation of subjects and of their evolution, in order to make a comparison between the initial tests and the final tests in order to verify the effectiveness of the means used.

Stage III - is the stage in which the complex of exercises for the correction of the attitudes and physical deficiencies have been applied.
Stage IV - is the stage in which the final testing shall be carried out.
Stage V - is the stage in which the results obtained in the course of the research shall be processed and interpreted, followed by the presentation of the findings.
The means employed:
-specific swimming
dynamic exercises which consist swimming the four specific processes swimming of contest (crawl, backstroke, throttle, breaststroke), and combinations between these processes (double rear arm with feet breaststroke, arms throttle with feet breaststrokr, arms bras with feet crawl etc.)
-exercises for the muscles of the spinal which consist in the swimming rear process, dual rear arm with feet rear on the rear arm movement locked with the raft and curl, etc.
-exercises for the abdominal muscles which consist in the swimming breaststroke process and procedure throttle and combinations between them.
-exercises for the development of the respiratory function which consist in swim all but with limited number of breaths for a length of the basin, or with the aid of special masks
-exercises for the upper limbs which consist in the block the action the legs with the aid of float and the movement will be done only by the action of the arms or with palms.
-exercises for the lower limbs which consist in bloking the action of the arms using the cork and the movement will be done only by the action the feet, or using their forepaws (Oneț, 2014).

In the basin will work one hour like this:

- 2x14 basins mixed (2 basins crowl, 2 basins throttle, 2 basins crowl, 2 basins backstroke, 2 basins crowl, 2 basins braststroke, 2 basins crowl);
- 2x6 basins feet throttle on the rear arms up;
- 2x6 basins throttle, three beats feet, a movement of arms, a breath;
- 2x6 basins feet throttle, at the same time with two arms crowl on the right side, after two arms crowl on the left side and one moving the throttle arms, with the breath to every movement arms;
- 6 basins the same exercice, but will be made one arm crowl left-right and two moving throttle arms.
- 8x1 basins throttle, maximal speed, insisting on the correct movement;
- the game with the ball.

- **Specific: gymnastics**:

-exercises in the form of corrective positions maintained
dynamic exercises in the form of corrective movements of the back, thorax, basin of the upper and lower within the meaning of straightening the spine (exercises will run active, freely or with resistance)
-exercises for the head and neck, extensions in the plan back, twists left - right.
-exercises for the upper limbs executed in the form of extensions horizontal over her shoulders.
-exercises for the trunk, total extensions, lateral inclination, kinks, circular movements of the limbs in the plan at the rear.
-breathing exercises.

The exercises used on land would last 30 minutes and include:

Free exercises with objects, portable appliances fixed and partner:

1. Walking with spring upper arm, at every step (2 x 8 time).
2. Walking on the tips with the maintenance of the arms back to the rear (2 x 8 time).
3. Walking with maintaining the swings got back to the sholders level (2 x 8 time).
4. Walking with the extension and spring upper arm and a lower-back lying, at every 4 time (2 x 8 time).
5. Combination of those.
6. P.I: stand

Movement:

1 – 2 Lunge forward with the right leg, with the extension of the arms and their spring at an oblique angle up;
3 – 4: return;
5 – 8: Repeat with the left foot in lunge (2 x 8 time).

7. P.I.: stand

Movement:

1 – 2: Step forward with his right foot, with arms lifting at the side and placing the palms at the base of the neck (elbows in the extension);
3 – 4: return;
5 – 8: repeat with left foot.(2 x 8 time).

8. P.I: The remote stand, with oblique cane went into the ends of the rear, right arm, left arm down

Movement:

1 – 2:Bending to the right, with the trunk of the spring,;

3 – 4: Bending to the left with the trunk of the spring;

5 – 8 repeat like 1 – 4. (2 x 8 time).

9. P.I.: With back to the ladder fixed, started with hands on the strip from above the heels of the attached to the strip.

Movement:

1 – 6: Extension of the trunk and head, without detaches the palms;

7 – 8:return.

10. P.I: facing the ladder fixed, at a distance of 1 arm, started with both hands over the chest.

Movement:

1 – 6: Lifting the right foot back, extension and the trunk of the head, maintaining the position..

7 – 8: return;

1 – 8: repet with left foot.

During raising and maintaining the legs back, the trunk is not twisted at no load. The exercise will be repeated 4-6 times.

11. P.I.: On the knees, on heel seated, the cane got back the ends.

Movement:

1 – 4: Raising the basin to vertical extension of the trunk with the batons up;

5 – 8: return. The exercise will be repeated 4-6 times.

12. P.I: Facial supine, arms stretched up

Movement:

1 – 2: Lifting it in the extension with greater arc of the right arm and left leg;

3 – 4: the same movement with the left arm and right leg;

5 – 8: repet 1-4. The exercise will be repeated 4-6 times..

13. P.I.: Facial lying down with his head toward the ladder fixed, started with hands on the strip from below

Movement:

1 – 8: Raising the trunk through which they have on each strip up to the one to which is performing a broad extension;

1 – 8: Lowering the strip with the strip and return to its initial position. The exercise will be repeated 4 - 6 times.

14. P.I: Facial lying across the bank of gymnastics, position maintained horizontally.

Movement:

1 – 4: The extension of the head, body, the lower limbs and arms side with retaining;

5 – 8: Return to horizontally. The exercise will be repeated 4-6 times..

Results:

Table 4. Evolution of the characteristics of the batch of subjects

Nr. Crt.	First name and last name	Sex	Age	Occupation	Condition	Ti	Tf
1	R.A.	W	14 years	student	At. Kyfotic	3cm	0cm
2	S.A.	W	13 years	student	At. Kyfotic	3cm	0 cm
3	M.A	W	12 years	student	At. Kyfotic	2 cm	0 cm
4	B.I.	W	14 years	student	At. Kyfotic	3 cm	0 cm
5	A.C.	W	13 years	student	At. Kyfotic	2,5 cm	0 cm
6	M.M.	W	13 years	student	Kyfosis	3 cm	2 cm
7	F.S.	W	14 years	student	Kyfosis	2 cm	0 cm
8	I.M.	M	12 years	student	At.Kyfotic	3 cm	0 cm
9	P.G.	M	13 years	student	Kyfosis	3 cm	2 cm
10	B.M.	M	14 years	student	At. Kifotic	2 cm	0 cm
11	G.D.	M	14 years	student	Kyfosis	6 cm	5 cm
12	S.D.	M	14 years	student	Kyfosis	4 cm	2 cm

In the case of subjects which present kyphotic attitudes:

In these cases, the kyphotic attitude was corrected entirely, the muscular power of the increased mobility of the column has been considerably improved, respiration has improved infrastructure is an increase of the thoracic elasticity like this:R.A-3cm; S.A-2,5cm; B.I.-4,5cm; A.C.-1,5cm; I.M.-1cm;B.M.-1,5cm

In the case of subjects with Kyphosis:

- M.M. diagnosed with thoracic kyphosis 3 cm has been registered a correction of kyphosis 2 cm of brawn has increased, breath has improved infrastructure is an increase in the thoracic elasticity with 2 cm and the mobility of the vertebral column has visible improved;
- F.S. diagnosed with thoracic kyphosis 2 cm, has been registered in a correction of kyphosis 2 cm of brawn has increased, breath has improved infrastructure is an increase in the thoracic elasticity with 3 cm and the mobility of the column has visible improved;
- P.G. diagnosed with thoracic kyphosis 3 cm has been registered a correction of kyphosis 1cm, muscular power has increased, breath has improved infrastructure is an increase in the thoracic elasticity with 0,5cm, and the mobility of the column has visible improved;
- G.D. diagnosed with thoracic kyphosis 6 cm, has been registered in a correction of kyphosis 1cm, muscular power has increased, breath has improved infrastructure is an increase in the thoracic elasticity with 2cm and the mobility of the column has visible improved;
- S.D. diagnosed with thoracic kyphosis 4 cm has been registered a correction of kyphosis 1cm, muscular power has increased, breath has improved infrastructure is an increase in the thoracic elasticity with 2cm and the mobility of the column has visible improved;

It should be noted that all subjects have been formed a pattern of and correct position both during the motion and rest.

Conclusions:

The Scientific issue tadded in this research consists in the institutional capacity of the theoretical and experimental work of specific models swimming gymnastics and with a view to their application in the process of correction of the kyphotic attitudes and physical kyphosis, which led to the optimization of the health status of children 12-14 years.

On the basis of the ongoing scientific information obtained in the course of the experiment training courses we can bring out the following practical and methodical recommendations:

- in order to detect the health problems of 12-14-year children it is necessary to carry out investigations, but also through the full medical examination and investigation.

The program should be drawn up and implemented on the basis of the health problems of children and the process of achieving this program should be accompanied at all times by the specialists in the field of physical culture.

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