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MONITORING PHYSICAL DEVELOPMENT OF THE PRIMARY URBAN SCHOOL PUPILS ACCORDING TO PIGNET'S THEORY

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Abstract. *Primary children aged between 7 and 10 years are characterized by certain growing and developing features of the whole organism as well as organ systems. In this context, the primary cycle stage is characterized by a series of essential changes in the child's life: the entourage, the circle of people, new obligations, reduced physical activity. All of these factors, in cumulation, require an intense physiological activity of the entire organ system, so in the period of adaptation to school conditions, increased attention is needed from parents and teachers. Any deviation in the normal development of the locomotor system, particularly attitude deficiencies, should be treated with seriousness.*
Keywords: *pupil, physical development, health, Pignet index, kinetotherapy.*

The degree of actuality and importance of the studied problem

Covering an extremely wide range of concerns and applications, kinesiology has developed and individualized branches with a relative autonomy, which, although based on the same laws and using the physical exercises as their own means, differ according to: the specific objectives and the methodology of selection, systematization, adaptation, combining and dosing of physical exercise, and by the concrete way in which treatment plans and programs are drawn up.

Kinetoprophylaxy, considered as an integral part and forward branch of the movement therapy, based on the unanimously accepted axiom in medical sciences, that "it is easier to prevent than to treat" can be applied to healthy people, to prevent them from disease or the occurrence of the physical deconditioning syndrome; but the elderly man to whom the deconditioning occurred, in order to avoid its worsening and organization but the sick man (with chronic diseases) in order to avoid the occurrence of worsening or complications of these diseases.

In this context, we can mention the following objectives pursued by practicing Kinetoprophylaxy:

- strengthening health;
- increasing the natural resistance of the organism to the pathogens from the external environment;
- establishing a normal psycho-physical balance between the body and the environment;
- for children, the most important objective is to provide conditions for the normal and harmonious growth and development of the body and, implicitly, to prevent the occurrence of physical deficiencies and the contacting of diseases that could affect their normal development.

Taking into account on the fact that primary Kinetoprophylaxy has general indications for all subjects regardless of age. Exercise programs vary depending on the health of the subjects and the pursued objectives. The dynamics of the growth and development of contemporary society according to several studies of native and foreign authors have the following **main purpose**: - to ensure a harmonious physical development.

Description of the situation in the research field and identification of the research issues. The particularities of the development of school-age children is reflected in the works of a number of researchers: Atanasiu C .; Baciu C .; Badiu T .; Iankelevici E .; Ifrim M .; Ionescu A. The characteristics of the scoliosis deficiencies and their kinetotherapy are reflected in the works of the

specialists: Radulescu A .; Obrascu C .; Ionescu A .; Motet D .; Caun E .; Zavalisca A .; Birtolan S. Etiopathogenesis and scoliosis recovery have been investigated by the following authors: Balteanu V .; Dumitru D .; Fozza C .; Белякова Н.; Гальченский В., Москалу Н.; Ильин Е.; Крячко И.

The aim of research: to monitor the physical development of Pignet primary school pupils and to improve the Kinetoprophylaxy process of attitude deficiencies in primary school pupils through the implementation of an experimental physical exercise kinetic model that would include physical recovery means.

Objectives of the investigation:

1. Studying the specialized literature and establishing the conceptual aspects regarding the Kinetoprophylaxy of the attitude deficiencies in the primary school pupils in the physical education process;

2. Analyzing and generalizing the results of the survey on the recovery and Kinetoprophylaxy of attitude deficiencies in school, conducted among the professionals of various professional orientations;

3. Assessment of the physical condition of the locomotor apparatus of pupils from a primary school, Chisinau;

4. Elaboration and argumentation of the effectiveness of the Experimental Model in physical education directed to reduce attitude deficiencies to 2nd form pupils.

The object of the research is the process of recovery and Kinetoprophylaxy of attitude deficiencies in the primary cycle pupils outside the program hours through the means of physical education.

Methodology of scientific research. The following research methods were used in this research: study of specialized literature, pedagogical observation, pedagogical survey, method of pedagogical experiment, method of control tests.

The important scientific problem solved in this field is to provide a recovery path in the process of physical education of the primary cycle children with attitudes deficiencies by elaborating and implementing an experimental model programs for the recovery and Kinetoprophylaxy of attitude deficiencies.

Theoretical significance. The elaboration of the Experimental Model Program for the recovery and Kinetoprophylaxy of attitude deficiencies in the primary cycle children will allow studying, awareness of the necessity and importance of it and will create premises for the implementation of the model in practice. Taking into consideration the number of children with attitude deficiencies as well as the gaps existing in their physical activity, it is necessary to recognize and state funding of this model, as well as its implementation in primary schools in the republic.

The study was conducted on a group of 27 pupils aged 7 to 10 years. To assess the healthy level of this group the literature was studied and the control test method was selected. The basis of the study was Pignet's theory and the findings according to this author. Pupils of the investigated group were initially evaluated at the following anthropometric indices: height, body mass and ribcage perimeter. As a result of these evaluations, we have found the following results that were presented in the table below.

From the ones shown in Table 1 we find that the height of the studied group is 124.4 cm which according to the statistical data of Moldova is a standard. At the same time we can observe that the body mass of the researched group is of 29 kg that does not exceed the physiological standard. According to the data obtained from the measurements of the ribcage perimeter during expiration we find a normal situation equal to 60.7 cm. Pignet's index coincide with poor appreciation. Taking into account the obtained results we propose a recovery program for the primary prevention of school-age children with the following recovery goals:

1. Maintaining and strengthening health

2. Stimulate natural processes of growth and

development

3. Ensure a physically harmonious development

4. Educate a correct and ample breath

5. Prevent the installation of deficient attitudes of the global and segmentation body.

Table1. Evaluation of anthropometric indices of pupils in the studied group

No. ord.	Name Surname of pupil	Gender	Ribcage perimeter inspiration (cm)	Ribcage perimeter expiration (cm)	Ribcage motion (cm)	Body mass (kg)	Height (cm)	Pignet index
1.	B. D.	M	61	57	4	25,3	124	41,7
2.	B. D.	M	61	58	3	25,4	121	37,6
3.	C. E.	F	57	55	2	26,5	120	38,5
4.	C. V.	F	58	55	3	21,6	121	44,4
5.	C. R.	M	59	57	2	24,0	124	43,0
6.	C. M.	F	61	58	3	23,4	123	41,6
7.	C. M.	F	70	67	3	24,2	125	33,8
8.	C. N.	M	60	58	2	29,8	129	41,2
9.	C. L.	F	65	61	4	28,8	127	37,2
10.	C. D.	M	59	57	2	34,4	130	38,6
11.	D. I.	M	61	58	3	29,0	128	41,0
12.	D. V.	M	74	71	3	41,0	138	26,0
13.	E. T.	M	73	71	2	39.2	135	24,8
14	G. M.	M	58	56	2	29,4	125	39,6
15.	G. T.	M	65	61	4	34,4	130	34,6
16.	I. M.	M	58	55	3	32,0	129	42,0
17	J. V.	M	70	68	2	31,2	118	18,8
18.	L. A.	M	59	57	2	32,4	126	36,6
19.	M. A.	F	71	69	2	34,0	125	22,0
20.	M. N.	F	68	65	3	30,1	124	28,9
21.	P. S.	M	70	68	2	28,4	119	22,6
22.	S. M.	F	61	58	3	27,3	120	34,7
23.	S. R	M	58	55	3	24,8	123	43,2
24.	S. M.	F	60	58	2	24,3	118	35,7
25.	T. N.	F	58	56	2	23,7	119	39,3
26.	T. E.	M	70	67	3	28,4	121	25,6
27.	V. M.	M	68	65	3	32,0	119	22,0
			63,4	60,7	2,6	29,0	124,4	34,7

The achievement of these objectives was accomplished with the help of the means of Kinetoprophylaxy, namely, dynamic exercises, analytical meant to contribute to the formation of a correct body attitude by permanently educating the neuromuscular and psychological reflux of the right attitude and the development of the static and dynamic muscular groups that develops and maintains the support morphological and functional aspect of the body's attitude.

In order to maintain and strengthen health, we have proposed exercises to develop and refine basic motor skills: walking, running, jumping, throwing, catching, and rolling.

To stimulate natural processes of growth and development we used exercises to develop and improve utilitarian-applied skills: balance walking, climbing, crawling and escalating.

To ensure a physically harmonious development, we performed exercises to improve the

posture that are aimed at correcting the kyphosis, lordosis and scoliosis, which are performed by fixed corrective or hyper-corrective posts, postural correction exercises.

To educate a fair and wide breath we have prescribed exercises from respiratory medical gymnastics and exercises for maintaining the effort capacity that play an important role in increasing cardiac output, ventilation per minute and alveolar ventilation, increasing blood flow in the muscles and thus an increased resistance in physical activity.

To prevent the build-up of deficient attitudes of global and segmentation body, we used exercises to maintain and correct muscle tone, which have as main objective the toning, first of all, of the correcting muscles of the trunk and the abdominal muscles.

Table 2 shows the results obtained after the 3-month kinetic program in which both homework and physical education courses were proposed: h = 125.4 cm, m = 27.5 kg, ribcage perimeter in expiration = 60 cm, Pignet indexes better +1.

Table 2. Anthropometric data (n - 27)

Anthropometric data	Initial evaluation	Final Evaluation	Results
Height (cm)	14,4	125,4	+1
Body mass (kg)	29	27,5	-1,5
Ribcage motion in expiration (cm)	60,7	62,2	+1,5
Pignet index PI=height-(body mass+ ribcage perimeter in expiration)	34,6	35,7	+1,1

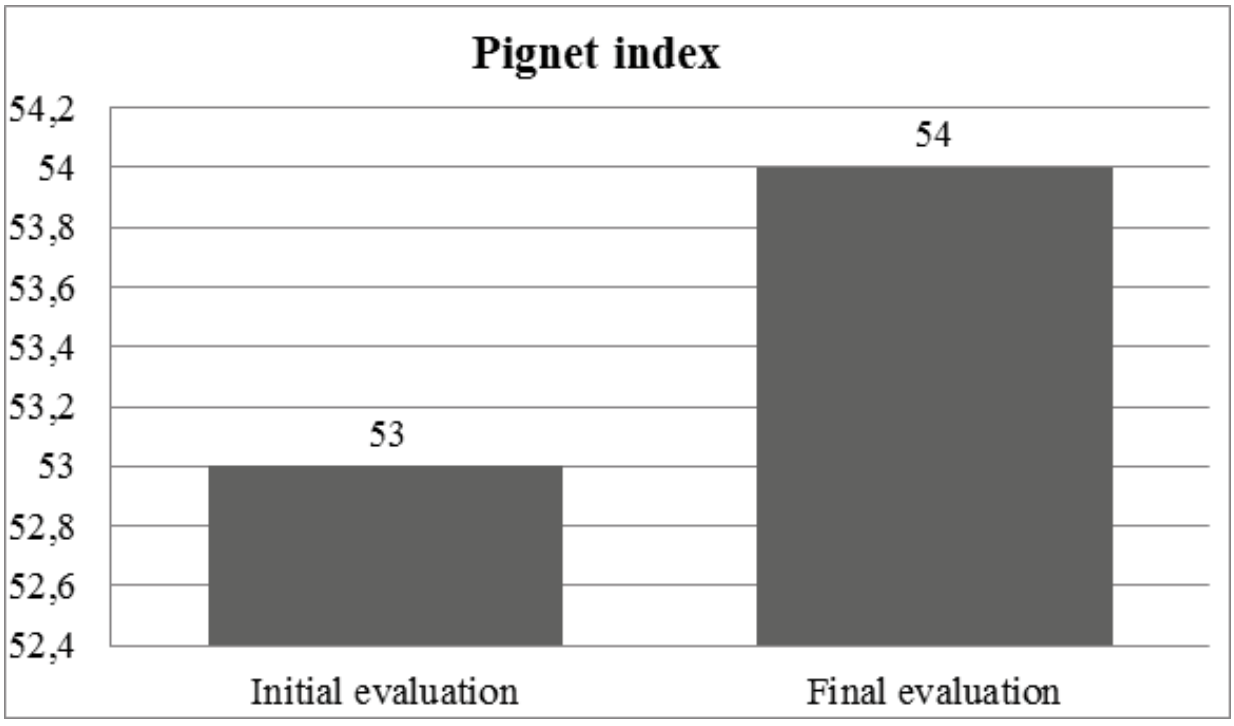

Fig. 1. Representation of Pignet physical development coefficient for initial and final evaluation in the experimental group study

Based on the analysis of the obtained results, we notice an insignificant improvement in the health of the investigated group, but it is encouraging that the trend of positive growth of the indices is dynamic. We can assume that maintaining the same kineto-prophylactic movement regime with small changes in the context will considerably improve the overall health of the growing society.

Conclusions

It is important to evaluate early the children with attitude deficiencies, through various rigorous methodologies.

Kinetotherapy and Kinetoprophylaxy are the most appropriate methods for preventing and treating children with attitude deficiencies.

To ensure and maintain optimum health, it is advisable to call on Kinetotherapy and Kinetoprophylaxy specialists.

References:

1. Moţet D., (2009). Enciclopedia de kinetoterapie. Bucureşti: Editura: Semne Artemis.
2. Revista Română de Kinetoterapie. Oradea 2014
http://www.kinetikmed.com/component/option,com_kunena/Itemid,22/catid,2/func,view/id,55/ Accesat 28.01.2018.
http://www.kinetikmed.com/component/option,com_kunena/Itemid,22/catid,2/func,view/id,54/ Accesat 28.01.2018
https://ro.wikipedia.org/wiki/Kinetoterapie Accesat 28.01.2018.
6. Zavalişca A., Demcenco P. (2011). Metode matematico-analitice de cercetare pedagogică în cultura fizică. Chişinău.
7. Zavalişca A., Tuchilă I., Demcenco P. (2010). Particularităţile de reabilitare a elevilor cu deficienţe fizice din ciclul gimnazial în procesul educaţiei fizice: monografie. Chişinău.
8. Zavalişca A., Căun E. (2011). Influenţa mijloacelor educaţiei fizice asupra greutăţii corpului. În: Ştiinţa culturii fizice, nr.1, Chişinău, p. 100-102.
9. Zavalişca A., Căun E. (2013). Recuperarea torticolismului în şcoală. În: Teoria şi arta educaţiei fizice în şcoală, nr. 1, Chişinău.
10. Zavalişca A., Tuchilă I., Demcenco P. (2009). Kinetoprofilaxia scoliozei. În: Teoria şi arta educaţiei fizice în şcoală, nr.4 , Chişinău.