

INTERVENTION STRATEGIES IN MANAGING OF MOTOR DEVELOPMENT PROBLEMS OF PRESCHOOL AGE CHILDREN

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Abstract: *The importance of the harmonious development of preschool age children is called into doubt, of the actual statistical information regarding of the stage of growth and development in the age to which we refer. Critical issues driving the development of small children have their motility-related causes, the lack of movement, poor posture that can be installed and become vicious body attitudes. During the past 20 years has been a dramatic increase in the number of preschool age children with developmental problems. In our experience, the means of movement are the most effectively in correcting the critical issues of physical development of preschool age children. According to most of specialists, corrective exercise programs, and games are giving remarkable results in poor attitude issues and positions. In this paper we proposed attracting children from the kindergarten in Aradippou B 'in Larnaka, identified with vicious deviation of the vertebral column, to exercise a program for improving and correcting deviations from the norm. We conducted six additional and corrective exercise programs for children with vicious deviations of the vertebral column, performed by 3x / week of 30 min. each, outside school hours. After the experimental program we resolving the vicious deviations of the spinal column in 66.5% which confirm our hypothesis.*

Key words: *preschool age children, motor development problems, approaching.*

1. Introduction

In the past years a large number of studies on children motor skills have been published and we notice that more and more critical problems have been recorded as related to an abnormal development, which in literature are mentioned as illnesses or physical deficiencies, names that we shall also use in the present paper [11], [12].

The today's child must be prepared for a dynamic society, in constant evolution, which requires a certain physical, intellectual, moral and civic configuration, a certain profile, combining harmoniously the levels of his personality: a healthy individual, with a harmonious physical development, a person with creative thinking and ability to select, systemise and reorganise information [1].

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Youth, health and beauty create the profile of a healthy person, with a harmonious physical development, radiating the beauty of vitality and vigour, even if he doesn't possess what we commonly call physical beauty [3].

The persons constantly doing exercise and taking care of their health, have a very well defined bodyline, harmonious movements, which require to be completed by intellectual and moral-ethical qualities [3].

In order to achieve this "kalokagathos" – a beautiful and good person – the essential part is played by physical health, being the basis on which all of the individual's actions are performed and towards which we have to focus our attention in each stage of our life [2], [6].

If health fortification through fortifying the body cannot be achieved in due time, a series of deficiencies and illnesses can appear, especially during a person's growing, period considered to be the most dangerous, through the transformations taking place in the human body, and which require a special attention not only from the parents and teachers, but also from doctors, which have to monitor, correct and control all the aspects related to the growing and development of children [5], [7], [9].

Before entering school and, the latest, during school years, discovering and monitoring physical illnesses or deficiencies are very important. We shall not refer to congenital illnesses, requiring special treatment, but to those unhealthy postures installing mostly during growth [4], [5], [10].

2. Physical Deficiencies–General Issues

The problem of detection, prevention and correction of physical deficiencies, that children may have, should be a permanent concern, both for parents and for teachers who deal with their growth and education.

Physical deficiencies are defined as deviations from normality, regarding body shape and physical functions, which disturb normal growth and harmonious development, modifying appearance, reducing skills and physical ability to adapt, diminishing work capacity [5].

Physical deficiencies are characterized by morphological changes more or less pronounced, occurring primarily in the body shape and structure and manifesting by the slowing or excessively increasing of growth, by a disordered or a disproportional development, deviations, distortions or other structural defects, preceded or followed by functional disorders [5], [9], [10].

Physical deficiencies can be differentiated according to their evolution, especially according to the possibilities to be corrected through exercise, in:

- Light or major physical deficiencies;
- Physical deficiencies recoverable on long or short term
- Irrecoverable physical deficiencies [10].

➤ Light Physical Deficiencies

Light physical deficiencies include small deviations from normality, regarding body shape and physical functions, meaning deficiencies detected in an early stage. These deficiencies refer to deficient postures regarding the entire body or just some of its parts and which can be remedied by the execution of correct movements [5], [10].

This category covers global deficient postures: kyphotic, asymmetrical rigid plan, as well as light segmental deficiencies such as: head and neck bent forward or sideways, bent or asymmetrical shoulders, torso in flexion, kyphotic, lordotic or scoliotic postures of the spine, Valgus deformity, of bent or flexed knees, abducted or bent legs. Detected in due

time, pending changes in tissue structure, light physical deficiencies can be corrected in most cases during regular school activities [5], [9], [10].

➤ **Average Physical Deficiencies**

Average physical deficiencies include morphological and functional, stationary or with slow evolution flows, which can be partially corrected or remain unchanged after the functional tests. Most of these deficiencies are segmental, which means they are located in different body regions, i.e. spine deficiencies (kyphoses, lordoses, kypholordoses, kyphoscolioses, rounded, kyphotic and in plan back, torso, abdomen, knees and legs deformities) [5], [9], [10]

➤ **Major Physical Deficiencies**

Major physical deficiencies consist in pathological changes, reaching an advanced stage of evolution. Most of the major deficiencies are determined in intrauterine life (loco-motor malformations) or as a result of paralysis, mild or joint trauma, infections or inflammations of the bones, joints, muscles or blood vessels, that influence the health of students and reduces the capacity to work [5], [9], [10].

3. Measures to Prevent Deficiencies

The prevention of physical deficiencies should begin when the child enters the pre-school system, but should continue during the entire period of school time.

Teachers, especially the teachers in charge with each class, helped by the physical education teachers and school doctor, should perform, at the beginning of each school year, in each class, a detailed medical examination, in order to detect postures and physical deficiencies while they are still in early stages.

With this purpose they should create collective and individual records containing anthropometric data, also calculate indices and record the physical deficiencies identified following the somatoscopic exam. The resulting data should be processed and the conclusions exposed to the board staff in order to take the necessary measures [4], [5], [7], [9], [10].

3.1. Sanitary Measures

In the family:

- Provide a fair proportion between work and leisure, between physical and individual of the pupils, so as to prevent fatigue and overwork;
- Daily exercise, in the morning, after awakening;
- Doing homework by respecting a correct body posture doing writing, the furniture being built or adapted to fit body dimensions;
- Rest and sleep must take place on a harder surface, with the head slightly elevated [1], [9], [10].

In kindergarten and school:

- Knowledge of the causes and circumstances that lead to unhealthy postures and remove them in time;
- The pupils have to be placed in the classroom according to their body height and to their wearing glasses or not. The light should fall from the left upper side for the right handed and from the right upper side for the left-handed pupils; Teachers, regardless the discipline they teach, but especially primary school teachers should check and correct the body posture of students as they sit at their desks, both when they take notes or listen to explanations.
- In order to have this result, the teacher must stay in such a position that he could be followed by students,

without them being forced to change their position, these changes favouring fatigue and deficient body postures;

- Exercising during the physical culture minute and active rest break;
- Organising breaks so as to contain gymnastics exercises, dynamic games and other exercises or games familiar to children, but also correcting exercises for body posture recovery [1], [9], [10].

3.2. Specific Physical Education Measures

- The sanitary measures of maintaining and developing a correct body posture must be supported particularly by the special measures, which are:
 - developing and maintaining morphological and functional support of the body posture by developing the groups of muscles with static and dynamic action;
 - permanent education of the complex neuro-muscular and psychic reflex of a correct body posture, through which pupils are constantly able to check whether they have a correct posture during the activities they perform;
 - in order to maintain and strengthen the correct body posture, we must develop in our children the next groups of muscles:
 - toning in (concentric) shaking conditions neck and back muscles;
 - toning in (eccentric) lengthening conditions torso muscles;
 - toning in shortening and lengthening conditions, symmetrically, triangles lateral muscles; toning the abdominal muscles and sacrum-lumbar muscles in order to fix the pelvis bone in the correct position, this being considered the key for body posture;
- toning in shortening and lengthening conditions of arm muscles, forearms, thighs and calves;
- the increasing of the shoulder and hip joints mobility create a certain independence in the movement of the arms from the shoulders, also of legs from the pelvis, scapula girdle and spine movements from the arm movements, made in the previous plan, with the pelvic belt and legs movements, performed in the back plan;
- toning in shortening conditions of plantar muscles;
- in a parallel with the exercises that lead to the development of specific muscle groups and chains exercises that contribute to complex neuro-muscular reflex, the correct body posture should also be introduced. The development of the neuro-muscular reflex, of a proper body posture is favoured by voluntary relaxation of the segments. This will contribute to the gradual extinction of tonic reflexes of muscle tension, manifested through hypertonia or muscle spasm, which tend to alter the normal behaviour of the segments.
- It's better for the exercise to be associated with respiration exercises, performed with an amplitude as large as possible and in different rhythms [4], [5], [10].

3.2.1. Research Purpose

- Highlighting vicious children with spinal deviations from kindergarten Aradippou B' - Larnaka, Cyprus.
- Develop and implement a remedial exercise program of the spinal column in children identified with vicious deviation of the spine.

3.2.2. Research objective

In this paper we proposed:

- Attracting children from the kindergarten in Aradippou B 'in Larnaka, identified with vicious deviation of the vertebral column, to exercise a program for improving and correcting deviations from the norm.

3.2.3. Research hypothesis

We believe that by involving preschool age children with developmental problems into a move games programs and corrective exercise programs we get:

- improving and correcting the deviations vertebral column in preschool age children of the kindergarten in Aradippou B '- Larnaka, Cyprus, by participating in remedial exercise programs;
- increased interest in sport and creating the conditions to form a correct motor behavior of the preschool age children;

3.2.4. Research methods and techniques

In this paper, in order to achieve the proposed objectives we used the following research methods [8]:

- observation;
- evaluation the anthropometric parameters and the deviations vertebral column;
- experimental method;
- the comparative method;
- statistical and mathematical methods;
- graphic and charting method;
- method of systemic analysis of statistical data.

3.2.5. Date and location of the research

Our research was conducted according to the following schedule:

- 3.1.09.–12/30/09 initial measurements;
- 1.1.10.–30.06.10. going the experiment;
- 1.7.10.–31.08.10. measurement, the final;
- 1.9.10.–30.09.10. final data collection;
- 01.10.10.–30.12.2010. analysis of results and statistical processing of data;
- 01/01/2011–30/04/2011 drawing conclusions and writing the paper.

In the experiment have participated 24 children with the vertebral column vicious deviations from the Lakatameia Ag.Neofytou kindergarten of Lefkosia Cyprus.

3.2.6. The experimental approach

The experimental approach has started through the identification and application of the initial measurements concerning the anthropometric indices, height, weight, after that we made measurement and evaluation to the children from the kindergarten Lakatameia Aghiou Neofytou of Lefkosia Cyprus [5], [9].

In the next stage we apply the corrective exercise program for children with vicious deviations of the vertebral column [4], [5], [9]. We conducted six additional activity programs performed by 3x / week of 30 min. each, outside school hours.

Finally we made measurement and evaluation of the children who participated in the experiment

The last stage of our research consisted of final data collection, the analysis of the results, and statistical processing of data and then formulation of conclusions and final editing of the paper.

3.2.7. Measurement results

The evaluation of children concerning the attitudes of posture and of the vertebral

column alignment was performed by orthopedic pediatrician and we selected the following data:

Table 1

No. Crt	THE POSTURE ATTITUDES	NO.CASES			NO.CASES		
		Initial	Final	resolved cases	Initial	Final	resolved cases
1	Deficiencies head-neck	3	1	2	4	2	2
2.	Asymmetric blades	3	0	3	2	0	2
3	Asymmetric shoulders	3	1	2	3	2	1
4.	Scoliosis attitude	3	2	1	3	2	1
5.	Lordosis attitude	3	2	1	2	2	0
6.	Kyphosis attitude	5	1	4	6	2	4
7	Obesity	3	0	3	1	1	0
8.	Rachitic thorax	4	3	1	5	3	2
9.	Abdominal atony	1	1	0	2	1	1
10.	Weight deficit	0	0	0	1	1	0

Next we present these quantities in Graphical form:

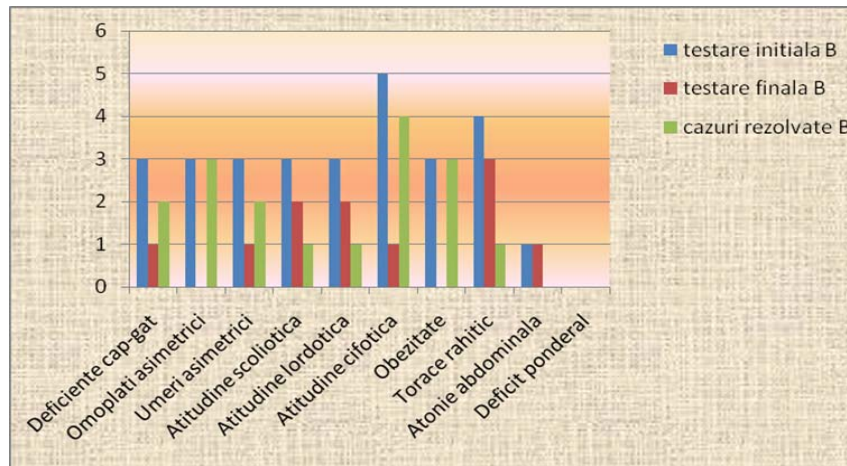


Chart 1. The number of the solved cases of boys with vicious deviations of the vertebral column who participated in the experiment

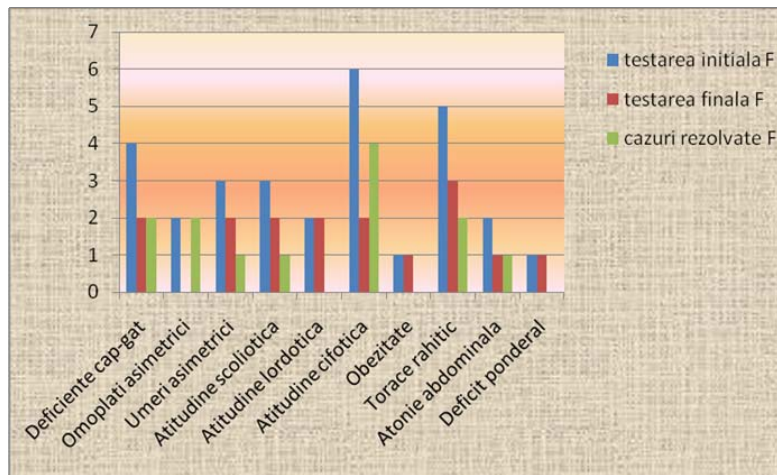


Chart 2. The number of the solved cases of girls with vicious deviations of the spinal column who participated in the experiment

The cases of deficiency of the spine [5], [9], solved to boys and girls shows the most progress in:

- asymmetric shoulder blades (5 din 5)
- kyphosis attitude (8 of 11)
- obesity (3 of 4).

Conclusions

The conclusions are focused on the hypothesis paper that confirms, namely:

- Resolving the vicious deviations of the spinal column in 66.5% confirms the hypothesis.
- Deficiencies in attitude: asymmetrical shoulders, lordosis, kyphosis, and weight deficit, have been resolved in 100%.
- The preschool age children demonstrate a great capacity to correct the vicious deviations of the spinal column, and high plasticity.

Proposals

- Increase the number of hours of physical education and sport at the preschool age children.

- To find new methods to getting children interested in movement in leisure activities and encouraging parents to support their children over.
- Awareness of children and parents about the dangers arising from the vicious deviations of the spinal column.
- Combating the habit to spend time at home on TV by advising parents and children to constructive activities, giving them models of athletes champions, heroes positive.

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