Research in Kinesiology
2017, Vol. 45, No. 1, pp. 36-38

PREVENTION OF POSTURAL SPINE DISORDERS IN Vth GRADE CHILDREN

Preliminary communication

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Abstract

The problem of physical activity of school age children, with the basic tasks of research is the construction of kinetic applicative adequate programs to eliminate manifest postural spaine disorders, the optimal level of ontogenetic morphological (anthropological) development. The main objective of the research is to determine the physical education curriculum and content that can be incorporated into the regular program of physical education classes with the main task of prevention and elimination of potential manifest disorders of the spine, with an accompanying harmonious biological development. The set of entities from which the sample of respondents was carried out for this study is defined as a student population of 208 male Vth grade primary school students. The first and basic condition was that they were involved in physical education. The study sample included 208 respondents. According to the method of selection of respondents sample was purposefully chose, and. Vh –grade primary school students were taken from Bijeljina Teslic, Foca and Pale. Special Programme for the Prevention of postural disorders well fit the set of activities carried out in schools, and we can say that this program with some modifications can be incorporated into the regular program of activities focused in the field of physical education. As short and very crude summary analysis of quantitative differences in the measured indicators of postural status can be concluded that statistical methods established relationship between the facts of experimental factors (special program of prevention of postural disorders of the spine) and postural status which is under the influence of the specified factors as compared to the control group tended to improve.

Keywords: *hypokinesia, male primary school, physical education curriculum, deformity, kyphosis, lordosis, experimental and control groups*

INTRODUCTION

Technical and technological progress and intensive produced work mechanization brought prosperity due to lack of movement caused the emergence of a number of negative consequences.

The need for muscle exertion is becoming scarcer, and the intensity of these efforts ever smaller. The increase in m any diseases, stress, physical deformities and more widespread obesity that sometimes the outcome opetativnih procedure (Nimesh et al., 2007).

Until now, many studies dealing with the problem of assessment and possible spinal column deformities, selecting the best indicators and assessing the reliability of those procedures (Wickens & Kiputh, 1937; Watson & Donncha, 2000; Straker & Mekhi, 2000; Pausić 2006;). All of the above research, and it is not specified, were carried out in order to detect irregularities and deformities in children and adults.

The modern way of life and school obligations regime led to hypokinesia of students at school and at home. Hypokinesia first leads to a weakening of the energy exchange, then the basic physiological systems and locomotor apparatus organism grows. The consequence of the above mentioned causes of the phenomenon of poor posture which, if not timely intervene and reveal (Nice, 1996) transformed into deformity. If the leaves started deviation, it can inexorably to progress to severe fixed deformities. A physical deformity of a child permanently marked, juveniles are more exposed to the impact and frequency of deformities (Friedel et al., 2002; Beganović & Bešović, 2012). Therefore, the primary task, display poor posture and deformity in the early stages, and do everything to prevent its further development.

The spinal column extends along the center line of the rear wall of the fuselage. As a relevant indicator takes the Frankfort plane, which is an indicator of regularities observed segments of the body. (Keros & Cave, 1977). The locomotion is a separate body with static and dynamic function. He wears a head, torso supports, surrounds and protects the spinal cord and participates in every movement of the body. Over the pelvis is connected to the lower extremities, so as to participate in their movements, by transferring the weight to the body weight of them.

They can be divided into four parts:

- Neck - cervical part, composed of 7 vertebrae,
- Thoracic part of the back, made up of 12 vertebrae,
- Lumbar - lumbar, composed of 5 vertebrae and
- Baptism - coccygeal composed of 9 - 10 vertebrae, of which the first five are inter-twinned and make tailbone. The spinal column is tasked to carry the weight of the segments that are above it and in its height as well as to provide troop movements. That is why she is going from the upper heights, as well as to provide troop movements. That is why she is going from the upper to the lower all parties massivniji. With this in mind, the spinal column must also be sturdy and agile. The two at first sight contradictory tasks enabled the structure of the spine. Movements between two adjacent vertebrae are minimal, or when the movements of the vertebrae sum up, it is quite a large range of motion.

In the sagittal plane spinal column builds four curves:

- Cervical lordosis - recessed door,
- Thoracic kyphosis - thoracic depression,
- Lumbar lordosis - lumbar recess,
- Baptism - tail turns.

Each of these has its own curvature najpokretljiviju point. The curvature of the cervical part of the spine is marked with the line that runs down the front side of the vertebral body, the highest in the height of the fourth cervical vertebra. Last curvature of the dorsal part of the strongest is expressed at the junction of the fifth and sixth vertebrae. Lumbar curvature of the most bulging at the junction of the third and fourth lumbar vertebra.

The subject of this research are postural disorders of the spine in children of school age and methods of prevention of postural disorders of the spine, preventive kineziterapija (special program).

The research problem is the construction of kinetic applied adequate physical activity programs with school children, with the primary task of preventing and eliminating manifested postural disorders of the spine, the optimal level of ontogenetic morphological (anthropological) development.

The main objective of the research is to determine the physical education curriculum and content that can be inkoporirati into the regular program of physical education classes with the main task of prevention and elimination of potential manifest disorders of the spine, with an accompanying harmonious biological development.

METHODS

A set of entities from which the sample of respondents was carried out for this study is defined as a population of male students in primary schools of primary schools in Bijeljina Teslic, Foca and Pale. The first and basic condition was that they were involved in physical education. In the study sample was comprised of elementary schools from 208 respondents.

The sample of variables for determining the status of the spinal column

To determine the status of the spinal column was used: Determining the degree of spinal deformity in children of school age by means of plumb, ruler, test methods and overnight Napoleon Wolanski.

The research contained procedures in 104 experimental and 104 control subsamples. The experiment lasted for one year. With the experimental group was three times a week for 45 minutes per group. They worked a trained physical education teachers. Subjects in the experimental subsamples were trained under the program for the prevention of postural disorders that were made after the initial measurements.

RESULTS AND DISCUSSION

The research results are presented in tables with text iinterpretaciju experimental and control subsamples before (initial measurement) and after (final measurement) experimental procedure are statistically analyzed and presented in tables. It was necessary to determine the existence of statistically significant differences in the initial measurement of what is done by comparing the experimental and control subsamples.

The basic characteristics (initial measurement) and after the experimental procedure (final measurement). The key elements are taken: postural status and physical development.

The significance of differences postural status between the experimental and control groups of boys at the initial and final measurement for kifotic and lordotic holding classes V (shown in Table. 1).

For boys this age showed no statistically significant difference in the final measurement in either case, but there is a tendency to decrease postural disorders in the experimental group compared to control how kifotic disorders and disorders lordotic type.

From the above it can be concluded that there has been a significant decrease in kifotic type of holding. However, this can not be said for the type lordotic posture.

The significance of differences postural status bet-ween the experimental and control groups of boys on the initial and final measurement for kifotic (K), and lordotic (L) type posture in class. (Shown in the table 2)

Expressed in apsoloutnim values kifotic bad posture tends to decline with the experimental group compared to the control group.

Boys on the initial measurement did not have significant differences ($p>0.05$) between the experimental and control groups in any of kifotic not at lordotic posture.

Table 1. Differences postural status between the experimental and control groups of boys at the Iinitial and final measurement for kifotic and lordotic holding classes V

	Kifotic (K)		Lordotic (L)	
	Initial measurement	Final measurement	Initial measurement	Final measurement
Sample of respondents	NE=104 K=104 KE=19 KK=12 t=0,782 p>0,05	NE=104 K=104 KE=10 KK=15 t=3,960 p<0,001	NE=104 NK=104 LE=18 LK=13 t=0,00 p>0,05	NE=104 NK=104 LE=18 LK=14 t=0,564 p>0,05

Table 2. Kifotic bad posture (K) lordotic bad posture (L) Initial measurement Final measurement Initial measurement Final measurement

	Kifotic bad posture (K)		Lordotic bad posture (L)	
	Initial measurement	Final measurement	Initial measurement	Final measurement e
Sample of respondents	NE =104 NK =104 KE=16 KK=18 t=0,018 p>0,05	NE=104 NK=104 KE=0 KK=11 t=3,232 p<0,005	NE=104 NK=104 LE=16 LK=19 t=0,274 p>0,05	NE=104 NK=104 LE=5 LK=18 t=2,133 p<0,05

CONCLUSION

Prevention emerging postural disorders is very important element in maintaining the health of children, because disturbances in its evolution may progress to deformity, whose consequences are far more difficult than might be assumed. In fact their influence was very significant for the overall physical development of the child, and this is one of the reasons why the research of this kind which had the task to usatnovi fact specially programmed work on the prevention of postural disorders of the spine in children of school age. The results of the analysis of relevant indicators show the following facts:

I. The study tracked effects specifically programmed work on postural status among school children in grade primary school

II. Applied program of work was made up of exercises to establish muscles as well as engaging paravertebral muscles and stretching exercises, extensions, postural balance exercises in the correction position and using elementary games appropriate for this age group.

III. Special Programme for the Prevention of postural disorders well fit the set of activities carried out in schools, and we can say that this program with some modifications may inkoporirati into the regular program of activities focused in the field of physical education.

As short and very crude summary analysis of quantitative differences in the measured indicators of postural status can be concluded that statistical methods established relationship between the facts of experimental factors (special program of prevention of postural disorders of the spine) and postural status which is under the influence of the specified factors as compared to the control group tended to improve.

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