

CORRECTIVE GYMNASTICS IN THE PHYSICAL EDUCATION LESSONS WITH STUDENTS IN SPECIAL SCHOOLS FOR MENTALLY RETARDED

Kiril Kostov, Stefan Kinov, Nevyana Dokova
South-West University Neofit Rilski, Blagoevgrad, BULGARIA
Department of Theory and methodology of physical education

Received on 26 June, 2016. Accepted on 30 June, 2016. Published on 10 July, 2016.

Abstract

In the whole system of impacts on students with mental retardation, viewing their more easy incorporation and professional orientation, basic place in the upbringing and educational process at the school for mentally retarded finds the physical activity. In the different forms of realization it is irreplaceable means for achieving greater effectiveness of education and upbringing of this kind of students. In the school physical education from the activities with physical element greatest application, find the game and gymnastics. The euphoria about the irreplaceable values of the game activity and the recommendations of some “capacities” that hardly the physical education of the students must be before all and mostly only a game, is on the way to lose its “actuality and originality”. With its characteristic peculiarities and specific impact, the gymnastic exercises solve a number of lawful-hygienic, educational and upbringing problems, as the necessity of solving corrective healing problems with great significance is outlined in students from schools for mentally retarded. Our preliminary investigations in this direction showed that this type of problems could be successfully solved only with the help of gymnastic activity and particularly with corrective gymnastic exercises. They are the most successful means for prophylactics and healing in many very characteristic and often met diseases with these students, of the locomotor system, for correction of the body stand, vertebral defects, disharmony between the different anthropometric indices, acquired flat foot, tight muscularity. Based on similar understanding, we conducted one-year experiment in the schools for mentally retarded in Blagoevgrad, in the village of Stob (Sofia region), in the village of Amahovo (Plovdiv region) and in Plovdiv. Our task was to check experimentally what are the possibilities for prophylactics or correction of already existing deformations of the vertebral column – basically scoliosis, with the help of specially selected gymnastic exercises with reformatory character.

Keywords: corrective gymnastics, mentally retarded students, scoliosis

Organisation of the experimental work

As it is well known, the scoliosis is vertebral defect, in the basis of which are before all innate and acquired disturbances of the connective tissue of the bone-articulation apparatus. As a sequence from this disease can appear some anomalies in the waist, displacement in the pelvic articulation, flat foot etc. The prophylactics and healing of scoliosis is brought mainly to general support of the muscles of the back, correction of the deformations and support of the acquired correction. Our understanding about the effectiveness of the purposeful healing-prophylactic and corrective gymnastics include “complexity of impact” with the help of “... corrective, asymmetric and symmetric exercises” (by V. A. Epifanov, G. L. Apanasenko, 1990). In this connection, in the complexes of gymnastic exercises we included such for active and passive flexibility, power dynamic and static exercises for bending of the muscles from the concave and for stretching from the convex side or the so called “asymmetric” exercises or exercises with the help of which is supported the “muscle corset” of the corpse, the so called “symmetric exercises” correcting

the nerve-muscle apparatus as a whole. The experimental work proceeded in the following way: in eight parallel groups (4 in second and in third class) in the study 2003/2004 year (totally 48 lessons) we separated 8-10 min in every lesson for purposeful work with underlined corrective character. With priority we worked for the development of flexibility, dynamic and static exercises performed with the help of medical balls, dumb-bells, gymnastic sticks, and exercises with counter action. We applied purposefully and exercises that were with periods 5-6 to 9-10 sec. and 7-8 repetitions of each of them (see appendix). For the performance of these exercises, we used gymnastic benches, gymnastic wall, partner for counter action, gymnastic carpets, sticks and others.

At the beginning and the end of the school year, all students were investigated for available vertebral defects. We made this using the method of scoliosogram, but the recording the angle of scoliosis we carried out by the method of J. Ferguson (G. Tsankova, D. Minkova, 1976).

Results and analysis

From the obtained results (Table 1) makes impression, that as a whole the children with mental retardation have the defects of the vertebral column in the side plain (deviations from the longitudinal axis on the left and on the right) or the so called scolises are often met pathological deviations from the norm. In boys as well as in girls with about the half-investigated students, are met less or bigger deformations in the vertebral column. Evidently, this fact is concerning the organic damage of the central nervous system. As a sequence from it are disturbances in the functions of nearly all organs and systems. However, as well as the decreased motive activity of these students, which is also sequence from "... the observed as remainder phenomenon damage of the motive analyser, exerting negative impact on the whole motive sphere" (I. G. Ermenko, 1985). From another side "...the often decreased motive activity appears as a result indirectly from the available defect in the psycho-physical development of the children", but this time because of week points in the activity of the teacher.

Table 1. Results in absolute and relative numbers about the presence and the degree of scoliosis of the tested students before the experiment

Age	Sex	Students	Without scoliosis	Degree of scoliosis		
				Till 5 deg	Till 7 deg	Above 7
-	-	Number	Num. %	Num. %	Num. %	Num. %
II class	m	31	14 45.2	6 19.3	7 22.6	4 12.9
	f	26	13 50.0	7 26.9	3 11.5	3 11.5
III class	m	34	18 52.9	5 14.7	9 26.5	2 5.9
	f	27	14 51.8	3.3	3 11.1	1 3.7
Total	-	118	59 50.0	27 22.9	22 18.6	10 8.5

In this way is observed the artificial introduction of hypokinesy, viewing relief in the motive regime of the child, because of the existing anomaly (B. Sermeev, 1990).

After the carried out by us experiment the results showed (Table 2) underlined positive effect from the purposeful use of the corrective physical exercises. In all experimental groups the number of students with scoliosis has considerably decreased (from 50.0% before the experiment, the children with scoliosis have decreased to 28.8% for all degrees of scoliosis). Except this there is sensible improvement in relation to the degree of vertebral defects, as nearly are not met children with scoliosis above 7 degrees (only 2 children of 118).

Table 2. Results in absolute and relative numbers about the presence and the degree of scoliosis after the experiment

Age	Sex	Students	Without scoliosis	Degree of scoliosis		
				Till 5 deg	Till 7 deg	Above 7
-	-	number	Num. %	Num. %	Num. %	Num. %
II class	m	31	23 74.2	5 16,1	3 9.7	- -
	f	26	9.2	5 19.2	2 7.7	1 3.8
III class	m	34	24 70.6	6 17.6	3 8.8	1 2.9
	f	27	19 70.4	7 25.9	1 3.7	- -
Total	-	118	84 71.2	23 19.5	9 7.6	2 1.7

In conclusion from the conducted experimental work can be made the following inferences:

1. Children with mental retardation have scoliosis as often-met are vertebral defects at pre-school age. In 50.0% of all investigated by us students (totally 118) we established to a bigger or smaller extent the presence of left side and right side scoliosis.

2. The systematic purposeful work with the help of specially selected gymnastic exercises with corrective character, which are in their essence exercises for passive and active flexibility and power exercises before all with isometric regime of the muscular activity, brought to sensible decrease of the absolute part of the students with scoliosis (from 50.0% at the beginning of the experiment to 28.8% at the end), as well as mostly the systemic exercises brought the considerable decrease of the degree of vertebral defects (scoliosis) – see Table 2.

3. In neither of the children, who at the beginning of the year had no scoliosis, was established the disease at the end of the experiment. This fact is categorical proof for the enormous prophylactic possibilities of the corrective gymnastic exercise (corrective gymnastics) in relation to the formation of right body stand of the growing.

Application

Sample gymnastic exercises for prophylactics and correction of scoliosis with students at pre-school age.

Exercises performed standing

1. Taking main stand, aiming at maximum stretching of the vertebral column and tightening (straining, fixing) of the muscles.

2. Exercises with dumb-bells (1 –3 kg) – lifting and taking down hands slowly and in different order (without bending in the elbow joints).

3. Active-passive correction of the vertebral column by pressing with hands the place, where is the convex part of the scoliosis. For example: if there is right side breast and left side more clear scoliosis, the right hand bent in the elbow and put by the side on the ribs presses inside the vertebral column, and the left in the same way presses the vertebral column but on the flank. In left side breast and right side waist scoliosis, the exercises are performed counter equal – the left hand presses the ribs, but the right – the flank and so on.

4. In right side breast and left side waist scoliosis –from main stand, hands aside – bending of hands in the elbow joint and putting them on the shoulders, combined with twisting of the vertebral column. In left side breast and right side waist scoliosis the exercises are performed counter equally.

5. From main stand, hands on flanks – lifting of fingers, aiming at the whole body to stretch possibly with utmost strength (upwards).
6. The same exercise, but the hands closed in the fingers are lifted up above the heads.
7. From main stand, taking hand straight and up with following imitation of climbing a rope.
8. From main stand, hands to the thighs – lifting of shoulder with twisting (turning) inside in the direction of the concave part of the breast scoliosis (relevantly right shoulder in right side breast and left shoulder in left side breast scoliosis).
9. From rear stand in front of the gymnastic wall with hands clutched 1-2 bars higher than the head in position over clutch. A step is made ahead, 5-6 sec pause and returning to starting position. The same is repeated with the other leg.

II. Hanging exercises

1. Hanging and rear hanging on the gymnastic wall.
2. From rear hanging – contraction of the side muscles of the corpse from the right side in right waist scoliosis and from the left side relevantly in left scoliosis. The legs are lifted towards the side of the strained muscles.
3. The same exercise, but horizontal bar and parallel bars.
4. Ordinary hanging on the gymnastic wall, parallel bars and horizontal bar.
5. Mixed hanging on the gymnastic wall, low parallel bars or horizontal bar with twisting of the body.
6. From hanging on the gymnastic wall, the two legs closely together - lifting the legs back and tightening vertebral muscles.

III. Lying exercises

1. From lying, the legs closely together to the body – lifting at one and the same time of legs and head, aiming to stop only on the abdomen.
2. From right side lying on incline gymnastic bench or board, laying with one end on the gymnastic wall (2 – 3 bars) – the right hand bent and put below the head and the left grasping 5 or 6 bars. Below the place of the convex part of the scoliosis (right side breast) is placed hard pillow (felt) – 10 – 15 cm high, the left leg bent before the knee of the right.
3. From lying, the hands to the corpse - lifting of the head and the shoulder belt and slow movement of the hands aside up and the opposite
4. From lying, hands aside – lifting of the head and the shoulder belt and movement in the wrist joint with hands (bending, stretching, down, up).
5. From right side lying, the right hand bent and placed under the head, the left hand free ahead – lifting of the left leg maximum up and back to initial state.
6. The same exercise, but the opposite from the left side lying.

IV. Exercises from the system “Yoga” (Asani)

“Semi candle”, “Candle”, “Fish”, “Plough”, “Head-knee pose”, “Cobra”, “Semi hopper”, “Bow”, “Sunny exercises” – variants, “Stretcher”, “Side bending” – variants, “Triangular”.

- Remarks: 1. The exercises with isometric regime of the muscular activity (static) were performed usually with duration up to 10 sec and 7 – 8 repetitions.
2. The Yoga poses were made in accordance with the principles and

requirements of the system “Yoga”. The duration of each of the asani is no longer than 15 – 20 sec.

References:

1. **Evtimov, V.** (1992), Yoga, OM, S.
2. **Eremenko, I. G.** (1985), Oligophrenopedagogy, ”Superior school”, Kiev
3. **Kostov, K.** (1987) Optimisation of the motive activity of students at primary school age, HPS – Blagoevgrad
4. Healing physical culture and physician’s control, edited by prof. V. A. Epifanov and prof. G. L. Apanasenko, M. (1990), ”Meditsina”
5. **Sermeev, B. V.**, Ways of increasing the effectiveness of the physical education of retarded children, magazine “Defectology”, 4/90
6. **Tsakova, G., Minkova – Georgiev D.**, Method for investigation of cerebral defects – scoliosis, First national congress in sport medicine and healing physical culture