

STUDY AND EDUCATION OF PERSONS WITH SPECIAL EDUCATIONAL NEEDS

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TO THE QUESTION OF SPECIAL EDUCATIONAL NEEDS OF JUNIOR SCHOOL CHILDREN WITH MUSCULOSKELETAL SYSTEM DISORDERS

Abstract. The article is devoted to revealing special educational needs of children with musculoskeletal system disorders (MSDs). The article emphasizes the urgency of this problem in connection with the implementation of the Federal State Educational Standard of primary education of students with disabilities. The article also presents a typology of children with motor impairments.

The author describes the results of a complex psycho-pedagogical study of development of 7-12 year old children with neuro-motor disorders and musculoskeletal system diseases and comes to the conclusion that children with MSDs (regardless of the nosological diagnosis) have special educational needs and require the establishment of special conditions for the acquisition of educational programs and successful adaptation at school.

Special educational needs of children with MSDs include: need of accessible architectural environment; rehabilitation of disorders of cognitive and speech development; psychological rehabilitation of emotional-personal impairments; rehabilitation work aimed at the development of self-service skills; help of a teaching assistant (tutor).

The proposed materials may represent practical interest for teachers and other pedagogical workers of education institutions, as well as for specialists of psycho-medico-pedagogical commissions.

Keywords: children with musculoskeletal system disorders, peculiarities of psycho-physical development, special educational needs, special conditions of teaching and upbringing of junior school children with MSDs.

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At the present stage of development of the Russian education, at the time of modernization of its law-normative basis and a wide spread of inclusion, the creation of conditions

for satisfaction of special educational needs of children with developmental disorders becomes the task of prime importance. This task turns out to be especially urgent in connection with

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implementation of the Federal State Educational Standard of primary education (FSES PE) for pupils with disabilities because the Standard is basically aimed at creation of special conditions for getting education by children with disabilities in accordance with their special educational needs [5; 6; 13].

The problem of creation of special conditions is particularly urgent for education institutions enrolling children with severe and multiple developmental disorders, including children with musculoskeletal system disorders (MSDs) [11]. According to special research, about 5-7% of children in our country have a certain kind of pathology of the system of bones and muscles and/or motor functions disorders [15]. While characterizing the composition of the group of such children we may paraphrase the words of a popular Canadian poet Robert Zend by saying that the children with musculoskeletal system disorders have only one common feature – they are all very different [2].

Following the typology of motor disorders suggested by I. Yu. Levchenko and O. G. Prikhod'ko children with MSDs may be conventionally subdivided into three groups [12]:

1. Children with musculoskeletal system disorders as an aftereffect of organic lesion of the central nervous system (CNS) (cerebral palsy (CP), *poliomyelitis, CNS developmental disorders, neuro-degenerative diseases, etc.*).

2. Children with congenital pathologies and deformations of the musculoskeletal system (hip dislocation,

scoliosis, bone deformations, etc.).

3. Children with acquired deformations of the musculoskeletal system (traumas, bone tumors, skeletal system diseases, etc.).

According to researchers, about 90% of the children with MSDs are children with CP; it is such children that are in the majority of cases pupils of schools for children with MSDs [9].

Clinico-psycho-pedagogical characteristic of children with various forms of CP is presented in the works of E. F. Arkhipova, L. A. Danilova, M. I. Ippolitova, E. S. Kalizhnyuk, E. I. Kirichenko, I. Yu. Levchenko, I. I. Mamaychuk, E. M. Mastjukova, I. I. Panchenko, O. G. Prikhod'ko, T. N. Simonova, I. A. Smirnova, L. B. Khalilova. The majority of the authors highlight considerable variability of the peculiarities of development of children with CP [7; 8; 12; 16].

At the same time, special literature does not pay due attention to the problems of investigation of the specificity of children with motor and static/dynamic disorders as effects of other nosological diagnoses.

Complex medico-psycho-pedagogical observation of 104 junior school age children with motor disorders caused by various diseases was carried out in the framework of an experimental study aimed at revealing special educational needs of junior schoolchildren with MSDs on the basis of the “Moscow Scientific-practical Center of Rehabilitation Technologies”.

Sampling was based on the following criteria: studying at a primary school along a general educational

program and absence of marked intellectual disabilities.

All participants of the experiment were conventionally divided into two groups. The first group was made up of children with CP (89.1% of the total), and the second group consisted of children with MSDs brought about by other diseases (10.9% of the total). The given article considers the results

of observation of peculiarities of development of the children of the second group which comprised 11 children with motor disorders aged 7-12. There were 8 boys and 3 girls among the participants. Table 1 gives brief characteristics of the observation of participants with a reference to the medical diagnoses.

Table 1

Characteristics of the experimental study participants

Name	Age	Educational situation	Medical diagnosis
B.S.	7	Grade 1 of regular school (general educational program)	<i>Ullrich</i> congenital muscular dystrophy
B.K.	9	Grade 3 of school for children with visual disorders (general educational program)	2 nd degree Kyphoscoliosis, planovalgus deformity. Unclassified connective tissue dysplasia.
G.R.	10	Grade 3 of distance education school (general educational program)	<i>Ullrich</i> congenital structural myopathy
G.K.	9	Grade 2 Center of Education Informatization "Sothern" (general educational program)	Congenital CNS malformation — spina bifida. Flail legs.
G.A.	12	Grade 4 of regular school (general educational program)	Demyelinating nervous system disease. Disseminated encephalomyelitis, recurrent multiphase run.
K.I.	11	Grade 4 of regular school (general educational program)	Congenital CNS malformation — spina bifida. Arnold-Chiari malformation. Flail legs.
K.A.	9	Grade 3 of regular school (general educational program)	Astrocytoma of crus cerebri and left thalamus. Effects of tumor removal. CP syndrome. Right-sided hemiparesis.
K.N.	10	Grade 4 of regular school (general educational program)	Effects of acute cerebrovascular disorder. Mild right-sided hemiparesis.
P.I.	7	Grade 1 of regular school (general educational program)	Osteogenesis imperfecta, Type III
S.A.	11	Grade 4 of home education school (general educational program)	Legg–Calvé–Perthes disease on the left of 3-4 degree
S.S.	8	Grade 1 of regular school (general educational program)	Myelodysplasia. Kimmerly anomaly. Unclassified connective tissue dysplasia.

Thus, the experimental group consisted of eight children with neuro-motor disorders of different genesis and three children with the system of muscles and bones diseases.

To achieve the aims in view, we organized a complex diagnostic observation of children with MSDs by an interdisciplinary team of specialists which included a neurologist, orthopedist, psychiatrist, psychologist, logopedist and specialist in social adaptation. Motor development, level of formation of cognitive functions, speech development and self-service skills were evaluated in the process of testing with the help of the following methods: clinical observation, anamnesis collection, analysis of medical documentation and neuro-visualization results; study of psychopedagogical documentation; observation and talks with the child's parents; psychological inspection; logopedic diagnostics; observation by a specialist in social adaptation.

The System of classification of global motor functions and the system of evaluation of the function of upper limbs worked out by V. G. Bosykh and N. T. Pavlovskaya were used for evaluation of the motor development of children with MSDs. Such parameters as ability to sit, ability to move, position of the arms, volume of movement in joints, ability to manipulate objects, muscle tone, level of development of graphic skills were determined.

The complex psycho-pedagogical observation included:

- logopedic observation in the course of which special attention was

paid to the parameters defining successful communication (speech distinctness, level of formation of coherent speech, communication potential, etc.);

- psychological testing based on the following diagnostic complex: letter correction test, remembering 10 words, *Raven's Progressive Matrices*, exclusion tests, matching tests, understanding implicit meaning in short stories, graphic test, "My class" method, the modified method "Stairs" [1; 10; 14];

- assessment of limitations in self-services.

The experiment participants significantly differed in severity of motor disorders. Seven participants had mild motor disorders (GMFCS — 0, 1, 2). The children could make a long move by themselves, did not show marked disorders of fine motor skills and had proper skills of self-service. One child had mild motor disorders (GMFCS — 3) and moved with the help of technical means, had no disorders of fine motor skills and proper skills of self-service. Three participants had severe motor disorders (GMFCS — 4, 5). They could move only in a wheelchair with outside assistance.

One of those children had no marked disorders of fine motor skills and possessed proper skills of self-service. Two children were absolutely dependent on outside assistance because due to the marked disorders of the manipulative function of the hands were not able to serve themselves. Alongside with motor disorders, two children had visual impairments.

Speech development of the participants ranged from absolute norm to marked disorders. Six children had

no speech problems. Three school-children had the logopedic conclusion of “level 3 general speech underdevelopment, mild spastic-paretic dysarthria”, one child’s disorder was diagnosed as “mild spastic-paretic dysarthria”, and one more child had the diagnosis “moderate spastic-ataxic dysarthria”. The communication function was formed in all children.

According to the psychodiagnostic observation data, all children needed additional psychological and/or pedagogical assistance of different amount in the process of school education.

A study of emotional-personal peculiarities and assessment of characteristics associated with successful learning and school adaptation were also carried out in the process of psycho-pedagogical observation.

Based on the results of the undertaken research, the following conclusions were made:

1. Schoolchildren with musculoskeletal system disorders represent a heterogeneous group of children with developmental disorders possessing considerable variability of peculiarities of physical, psychological and speech development.

2. Children with MSDs regardless of the cause and nature of motor disabilities have special educational needs and require the creation of special conditions for the acquisition of educational programs and successful development.

3. While providing education for children with MSDs it is necessary to take into account special educational needs of such children of accessible

architectural environment; rehabilitation of disorders of cognitive and speech development; psychological rehabilitation of emotional-personal impairments; rehabilitation work aimed at the development of self-service skills; and, if necessary, help of a teaching assistant (tutor).

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