14. Siddika A, Ab Rahman S, Alam MK. Cephalometric for Orthognathic Surgery (COGS) Analysis for Saudi Population. Pesquisa Brasileira em Odontopediatria e Clínica Integrada. 2021 Nov 18;21:e0090. doi: 10.1590/pboci.2021.151
15. Singh G, Agrawal A, Chaturvedi TP, Naveen KP. A Computer Assisted Comparison of Cephalometric Norms between Caucasians and North Indian Population: An Analytical Study. Sch Bull, April 2019;5(4):138–47. doi: 10.21276/sb.2019.5.4.2

**N.G. Pakhomova, I.V. Baranets, A.V. Lukianenko[1], N.P. Leshchii[2], O.B. Kachurovska[3],
O.I. Berezan, O.I. Olefir**
Poltava V. G. Korolenko National Pedagogical University, Poltava
**[1]Mykola Yarmachenko Institute of Special Pedagogy and Psychology of the National Academy
of Pedagogical Sciences of Ukraine, Kyiv,**
[2]South Ukrainian National Pedagogical University named after K. D. Ushynsky, Odessa
[3]National Pedagogical Dragomanov University, Kyiv

COMPREHENSIVE REHABILITATION
OF CHILDREN WITH SENSORY AND INTELLECTUAL DISORDERS

e-mail: inessaibk@gmail.com

The article presents the results of comprehensive rehabilitation of primary school children with sensory and intellectual disabilities, namely children with sensorineural deafness combined with mild mental retardation. The purpose of the study was to test the effectiveness of a comprehensive, differentiated system of correctional and health work with children of primary school age with complex developmental disorders. This study lasted during 2013–2021, during which a comprehensive rehabilitation of 100 children of primary school age (7–10 years) with severe developmental disabilities, including 53 girls and 47 boys, was carried out. It was found that after a comprehensive corrective and health work in girls of the experimental group of 7–10 years, the repeated indices of the vital index were probably better compared to CG girls of 7–10 years by 4.87 %, strength index – by 3.24 %, Stange's test – by 3.78 seconds, Genchi's test – by 4.69 seconds, Ruffier's test – by 3.26 c.u., Skibinski's index – by 2.32 c.u. At the same time, there was a positive trend in EG boys aged 7–10 years, where recurrent vital signs were probably better than in CG boys aged 7–10 years by 3.00 %, strength index – by 3.97 %, Stange's test – by 6.98 seconds, Genchi's test – by 2.02 seconds, Ruffier's test – by 3.14 c.u., Skibinski's index – by 2.33 c.u. The study's results confirmed their practical significance in the implementation of medical, psychological and pedagogical rehabilitation of this category of children.

Key words: rehabilitation, physical development, hearing disorders, intellectual disorders, children with complex developmental disorders, correctional and health-improving work.

**Н.Г. Пахомова, І.В. Баранець, А.В. Лук'яненко, Н.П. Лещій, О.Б. Качуровська,
О.І. Березан, О.І. Олефір**

КОМПЛЕКСНА РЕАБІЛІТАЦІЯ ДІТЕЙ ІЗ СЕНСОРНИМИ
ТА ІНТЕЛЕКТУАЛЬНИМИ ПОРУШЕННЯМИ

У статті представлені результати комплексної реабілітації дітей молодшого шкільного віку із сенсорними та інтелектуальними порушеннями, а саме дітей із нейросенсорною глухотою у поєднанні з легкою розумовою відсталістю. Метою дослідження була перевірка ефективності комплексної, диференційованої системи організації корекційно-оздоровчої роботи з дітьми молодшого шкільного віку зі складними порушеннями розвитку. Дане дослідження тривало протягом 2013–2021 рр., в ході якого проведено комплексну реабілітацію 100 дітей молодшого шкільного віку (7–10 років) зі складними порушеннями розвитку, з них 53 дівчат та 47 хлопців. В результаті дослідження було встановлено, що після проведення комплексної корекційно-оздоровчої роботи у дівчат експериментальної групи 7–10 років повторні показники життєвого індексу були вірогідно кращі порівняно з дівчатами КГ 7–10 років на 4,87 %, силового індексу – на 3,24 %, проби Штанге – на 3,78 с, Генчі – на 4,69 с, індексу Руф'є – на 3,26 у.о., індексу Скібінського – на 2,32 у.о. Поряд з цим відмічена позитивна динаміка у хлопчиків ЕГ 7–10 років, де повторні показники життєвого індексу були вірогідно кращі порівняно з хлопчиками КГ 7–10 років на 3,00 %, силового індексу – на 3,97 %, проби Штанге – на 6,98 с, Генчі – 2,02 с, індексу Руф'є – на 3,14 у.о., індексу Скібінського – на 2,33 у.о. Отримані результати дослідження підтвердили їх практичне значення у здійсненні медичної і психолого-педагогічної реабілітації означеної категорії дітей.

Ключові слова: реабілітація, фізичний розвиток, порушення слуху і мовлення, інтелектуальні порушення, діти зі складними порушеннями розвитку, корекційно-оздоровча робота.

The development of the state in the context of European guidelines implies a focus on the health of the younger generation. An essential role in improving the population's health status is played by the individual's awareness of the need to preserve their health and maintain a healthy lifestyle, which is greatly facilitated by the effective organization of correctional and health-improving work. However, to help

children with mental and physical disabilities, there is a need to create a system of correctional and rehabilitation support, combining the efforts of medicine and special pedagogy. Therefore, there is a socio-pedagogical and scientific-applied problem of inconsistency between the demand for improvement of the psychophysical and functional state of children with complex developmental disabilities for their full integration into society. Insufficient development of such powerful tools as correctional and health-improving work in organizing complex rehabilitation of this category of children also remains.

Comprehensive rehabilitation is manifested in the special education process of children with developmental disabilities and has a continuous multidimensional and interdisciplinary character. Early diagnosis and detection of abnormalities in the development and health of the child, as well as the time of the beginning of preventive, curative and developmental measures, are essential in complex correctional work. Thus, the development of the author's technologies of complex qualified support of children with complex disorders (the presence of two or more primary diseases) was preceded by the study of manifestations of functional, physical and psycho-emotional development [8]. This allowed us to identify priority areas and effective methods for overcoming functioning limitations.

A number of studies devoted to the study of overcoming complex disorders in children [1, 4, 9–11] show that the success of this process depends on the organization of medical and pedagogical measures, educational and rehabilitation areas based on special techniques and methods of correctional and rehabilitation work, taking into account the individual potential of the child.

According to I. Kravchenko, the individual approach should take into account the clinical diagnosis, the structure of the defect, secondary abnormalities, the presence of complications, the state of the analyzers, psychomotor development, individual characteristics of cognitive processes, the zone of actual and immediate development, self-esteem, the child's attitude to his own defect, compensatory capabilities, features of the emotional sphere and characterological features [6].

According to A. Lugovskyi, rehabilitation support is a set of medical, physical, psychological, speech therapy, and social services related to training, which are provided in parallel and coordinated with the pedagogical and rehabilitation priorities. They create special conditions for learning and socialization, including individualization of programs, availability of premises, and adaptation of the environment [3].

The research of leading scientists has revealed the features of teaching and physical education of children with special educational needs [2–5, 11]. Long-term practice proves the effectiveness of corrective and health-improving means of influence, constantly enriching science with new empirical data. However, a comprehensive approach to rehabilitation work with children with severe developmental disabilities is presented in fragments.

The purpose of the study was to substantiate and experimentally test the effectiveness of a comprehensive, differentiated system of correctional and health work with children of primary school age with sensory and intellectual disabilities.

Materials and methods. During the 2013–2021 years, we performed a comprehensive study that tested the effectiveness of the developed program of corrective and health classes for children with complex disorders. 100 primary school children with severe developmental disabilities (hearing impairment combined with intellectual disabilities) were involved in the study. 53 girls and 47 boys were divided into 2 groups of experimental (EG) and control (CG) by random sampling. The experimental group of 7–8-year-olds consisted of 13 girls, the control group – consisted of 12 girls, boys – 12 and 13 people in the respective groups. The 9–10-year-olds group consisted of 14 girls in the experimental and control groups, and 11 boys were in each group.

Implementing the corrective and health-improving program involved the performance of three consecutive periods: preparatory, training and maintenance, and allocating specific tools to implement the tasks. The program provided the availability of special sets of physical exercises, which were used to influence certain factors in the structure of the general level of physical health [7].

The duration of classes, the intensity of physical activity, and the differentiation of means were the essential structural components of the content of the correctional and health-improving program for primary school children.

According to each stage of implementation of the correctional and wellness program, depending on the level of physical health of a child with complex developmental disorders, the duration and intensity of physical activity was different. For children of primary school age with a low level of physical health in the preparatory period, the duration of the lesson was 20–25 minutes, in the training period – 35–40 minutes; in the maintenance period – 50–55 minutes; the intensity of physical activity was 40–45% and 45–50% of the heart rate reserve, respectively.

The duration of the physical training and health program for children with below-average physical health in the preparatory period was 25–30 minutes, in training – 30–45 minutes, in maintenance – 55–60 minutes; the intensity of physical activity was 45–50 %, 50–55 % and 55–60 % of the heart rate reserve, respectively. Children with an average level of physical health in the preparatory period were engaged for 30–35 minutes, in training – 45–50 minutes, and in maintenance – 60 minutes; the intensity of physical activity in the respective periods was 45–50 %, 55–60 % and 60–70 % of the heart rate reserve.

Taking into account the factor analysis and the selection of the most important indices that determine the level of physical health of primary school children, the ratio of means in the fitness program was as follows. 45% of the volume were exercises aimed at improving the functional state of the cardiovascular and respiratory systems; 35 % – to increase strength and speed-power motor skills, 20% – to improve flexibility and coordination.

Static and dynamic breathing exercises were used to improve the functional state of the respiratory system and increase resistance to hypoxia in the respiratory center. The number of repetitions of static breathing exercises was 4–5 times, then gradually increased to 7–8 as a degree of fitness of the body of children with complex developmental disorders trained.

Aerobic exercise was used to improve physical performance and general physical health, which helped to stimulate blood circulation and normalize hemodynamic disorders.

Special exercises for stretching the spine and relaxing muscles, correcting postures, and exercises on a fit ball and with weights were used to correct posture disorders, strengthen malnutrition groups of muscles, and form a proper muscular corset.

Methods of descriptive statistics and testing of statistical hypotheses (t-test for dependent and independent data) were used to compare the results of the study. The reliability level p=95 % (significance level α=0.05) was used to determine significant differences between the samples. In the case where the calculated value of the criterion did not exceed the critical level of significance of 0.05, the differences were considered statistically insignificant and indicated in the tables as (p>0.05), if the calculated value of the criterion exceeded the critical value at the significance level of 0.05 – this indicated the presence of statistically significant differences (p<0.05).

Results of the study and their discussion. To assess the effectiveness and efficiency of the developed correctional and health work methods in the training and rehabilitation centre, a re-examining of children with severe developmental disorders was performed. According to its results, significant changes were found in most indices of physical development, functional state of the cardio-respiratory system, level of physical health and readiness of EG students compared to CG.

At the ascertaining stage of the pedagogical experiment, the studied girls of EG and CG were homogeneous in all anthropometric parameters (p> 0.05). During the experiment in EG and CG groups of 7–8 years and 9–10 years-girls body length and body weight increased, but these changes were insignificant (p> 0.05).

Chest circumference in EG girls of 7–8 years significantly increased by 2.76 cm (p<0.01), in 9–10 years – by 2.52 cm (p<0.01), which indicated the development of muscles involved in the act of breathing, as well as the chest. In CG girls aged 7–8 and 9–10, the chest circumference also increased, but the changes were insignificant. At the end of the study, the value of the chest circumference in the EG of girls aged 7–8 years was 1.66 cm (p <0.01) higher compared to the CG of girls aged 7–8 years; in EG girls aged 9–10 years – by 1.41 cm (p <0.05), which emphasizes the positive effect of the developed method of physical culture and health work.

No significant differences were noted when comparing all functional parameters at the beginning of the experiment between the study groups. Changes in functional parameters in girls in the studied groups are presented in Table 1.

Analysing the change in functional parameters in girls, it was found that the value of the vital index at the stage of the ascertaining experiment in all groups of examined children corresponded to a lower than average level. The resulting reduced vital index values in both groups of girls may also be due to the presence of kyphotic posture, which significantly limits chest excursion. The vital index in the EG of girls aged 7–8 years significantly improved during the study by 6 % (p<0.05), and in the group of girls aged 9–10 years – by 3 % (p<0.01). This indicated an increase in vital lung capacity and the functional capabilities of the external respiratory system. Its average value in EG girls of both age groups at the end of the study corresponded to the average level. In CG girls, the value of the vital index in the age group 7–8 years improved by only 1% (p>0.05), 9–10 years – by 0.40 % (p>0.05). At the end of the study, the vital index in girls EG was significantly higher by 4.87 % (p<0.05) compared with CG in the age group 7–8 years and by 2.40% (p<0.05) – in the age group 9–10 years.

Table 1

Functional parameters in primary school-age girls with complex developmental disorders (n=53)

Parameter, units	Groups	7–8 years old (EG=13, CG=12)			9–10 years old (EG=14, CG=14)		
		Before the study	After the study	p	Before the study	After the study	p
Vital index (%)	EG	41.21±2.06	47.21±1.75	**<0.05**	44.30±1.11	47.30±1.09	**<0.05**
	CG	41.34±2.36	42.34±1.96*	>0.05	44.50±1.12	44.90±1.08*	>0.05
Strength Index (%)	EG	42.15±1.38	46.55±1.18	**<0.05**	43.20±1.35	47.20±1.15	**<0.05**
	CG	42.35±1.34	43.31±1.24*	>0.05	43.70±1.31	44.70±1.20	>0.05
Stange's test (seconds)	EG	35.12±1.32	41.12±1.35	**<0.01**	38.18±1.13	43.18±1.13	**<0.01**
	CG	35.34±1.22	37.34±1.38*	>0.05	38.58±1.12	39.58±1.10*	>0.05
Genchi's test (seconds)	EG	12.23±0.82	18.26±0.92	**<0.01**	15.16±1.77	19.96±1.05	**<0.05**
	CG	12.58±0.82	13.57±0.91 **	>0.05	15.26±1.67	16.26±1.26*	>0.05
Ruffier's test (c.u.)	EG	13.21±1.18	9.21±0.97	**<0.05**	14.11±1.28	10.11±1.21	**<0.05**
	CG	13.17±1.10	12.47±1.10*	>0.05	14.22±1.26	13.52±1.23*	>0.05
Skibinski's index (c.u.)	EG	8.29±0.22	11.29±0.28	**<0.05**	8.20±1.12	11.25±0.87	**<0.05**
	CG	8.30±0.21	8.97±0.27 ***	>0.05	8.25±1.13	8.80±1.03*	>0.05
Heart rate (per 1 min.)	EG	89.34±4.31	87.34±3.22	>0.05	86.10±4.00	83.10±4.00	>0.05
	CG	89.54±4.39	89.14±4.22	>0.05	86.20±4.10	85.00±4.10	>0.05
ABP (systolic)	EG	98.11±3.11	100.11±2.14	>0.05	100.11±4.93	104.11±3.73	>0.05
	CG	98.23±2.98	99.99±2.98	>0.05	100.23±4.33	101.23±3.33	>0.05
ABP (diastolic)	EG	64.79±3.94	65.82±2.64	>0.05	66.23±3.91	67.23±3.11	>0.05
	CG	64.82±2.64	64.99±2.51	>0.05	66.53±3.81	66.93±3.00	>0.05

Note: *– $p<0.05$; * * – $p<0.01$,* * – $p<0.001$ when comparing parameters between the experimental and control groups at the end of a comprehensive study.

According to the results of the analysis of changes in the parameters of the cardiorespiratory system in the EG group of girls aged 7–8 years, there was a probable increase in strength index by 4.4% ($p <0.05$), in the Stange's test by 6.00 seconds ($p<0.01$), in Genchi's test – at 6.03 seconds ($p <0.01$); in Skibinski's index – by 3 c.u. ($p<0.05$) and a decrease in the Ruffier's test by 4.00 c.u. ($p <0.05$). In the group of girls 9–10 years, the changes in the above parameters occurred by 4 % ($p <0.05$), 5.00 seconds ($p <0.01$), 4.36 seconds ($p <0.01$), by 3.05 c.u. ($p<0.05$) and 4.00 c.u. ($p <0.05$).

After the study in EG girls of 7–8 years, the repeated parameters of the vital index were probably better compared to CG girls of 7–8 years by 4.87 % ($p <0.05$), strength index – by 3.24 % ($p<0.05$), Stange's test – by 3.78 seconds ($p<0.05$), Genchi's test – by 4.69 seconds ($p<0.01$), Ruffier's test – by 3.26 c.u. ($p<0.05$), Skibinski's index – by 2.32 c.u. ($p<0.001$).

In EG girls of 9–10 years of age, recurrent vital signs were also significantly better compared to CG girls 9–10 years of age by 2.40% ($p<0.05$), Stange's test – by 3.60 seconds ($p<0.05$), Genchi's test – by 3.41 seconds ($p<0.05$), Ruffier's test – by 3.41 c.u. ($p<0.05$), Skibinski's index – by 2.45 c.u. ($p<0.05$).

Changes in functional parameters in boys in the studied groups are presented in Table 2.

Analysis of functional parameters in boys revealed a significant improvement in boys EG 7–8 years of vital index by 3.70 % ($p<0.05$), strength index – by 4.87 % ($p<0.01$), Stange's test –by 9.00 seconds ($p <0.05$), Genchi's test – by 3.00 seconds ($p <0.05$), the Ruffier's test – by 4.10 c.u. ($p<0.05$), Skibinski's index – by 3.00 c.u. ($p<0.05$) in the mathematical processing of results according to Student's test. In the boys of 9–10 years, the above parameters improved by 3.00 % ($p>0.05$), 3.77 % ($p<0.05$), 7.00 seconds ($p<0.05$), 4.00 seconds ($p<0.01$), 4.00 c.u. ($p<0.05$), 3.00 c.u. ($p<0.05$).

At the end of the study, the mean value of the vital index in boys of EG of both age groups corresponded to a lower than average level; in CG boys, it was low.

At the same time, in CG boys 7–8 years during the study, the vital index improved by 0.50 % ($p>0.05$), the strength index – by 0.80 % ($p>0.05$), the Stange's test – by 2.00 seconds ($p>0.05$), Genchi's test – by 1.00 second ($p>0.05$), the Ruffier's test – by 1.00 c.u. ($p>0.05$), the Skibinski's index – by 0.60 c.u. ($p>0.05$). In the boys of 9–10 years, the above parameters improved by 0.68 % ($p>0.05$), 0.30 % ($p>0.05$), 1.10 seconds ($p>0.05$), 0.70 seconds ($p<0.01$), 0.11 c.u. ($p>0.05$), 0.60 c.u. ($p>0.05$).

After the study in EG boys of 7–8 years, the repeated parameters of the vital index were probably better compared to CG boys of 7–8 years by 3.00 % ($p <0.05$), strength index – by 3.97 % ($p<0.05$), Stange's test – by 6.98 seconds ($p<0.05$), Genchi's test – by 2.02 seconds ($p<0.01$), Ruffier's test – by 3.14 c.u. ($p<0.05$), Skibinski's index – by 2.33 c.u. ($p<0.001$).

Boys of 9–10 years showed significantly better parameters of the vital index compared to CG boys of 9–10 years by 2.34 % (p<0.05), strength index – by 3.58 % (p<0.05), Stange's test – by 5.50 seconds (p<0.05), Genchi's test – by 3.20 seconds (p<0.01), Ruffier's test – by 4.21 c.u. (p<0.01), Skibinski's index – by 2.46 c.u. (p<0.001).

Table 2

Functional parameters in primary school-age boys with complex developmental disorders (n=47)

Parameter, units	Groups	7–8 years old (EG=12, CG=13)			9–10 years old (EG=11, CG=11)		
		Before the study	After the study	p	Before the study	After the study	p
Vital index (%)	EG	43.10±1.16	46.80±0.89	**<0.05**	45.23±1.15	48.23±0.95	>0.05
	CG	43.20±1.15	43.80±1.11*	>0.05	45.21±1.19	45.89±1.09*	>0.05
Strength Index (%)	EG	42.00±1.37	46.87±1.09	**<0.01**	45.21±1.31	48.98±1.01	**<0.05**
	CG	42.10±1.33	42.90±1.31*	>0.05	45.10±1.24	45.40±1.21*	>0.05
Stange's test (seconds)	EG	34.32±1.20	43.32±1.10	**<0.01**	38.12±1.07	45.12±1.05	**<0.05**
	CG	34.34±1.13	36.34±1.03 **	>0.05	38.52±1.13	39.62±1.03*	>0.05
Genchi's test (seconds)	EG	14.15±0.76	17.15±0.76	**<0.05**	15.19±0.70	19.19±0.60	**<0.01**
	CG	14.13±0.75	15.13±0.55*	>0.05	15.29±0.69	15.99±0.59 **	>0.05
Ruffier's test (c.u.)	EG	14.21±1.09	10.11±0.89	**<0.05**	14.01±0.61	10.01±0.58	**<0.01**
	CG	14.25±1.01	13.25±0.99*	>0.05	14.11±0.65	14.22±0.45 **	>0.05
Skibinski's Index (c.u.)	EG	7.31±0.32	10.31±0.32	**<0.05**	8.29±0.15	11.29±0.15	**<0.01**
	CG	7.38±0.26	7.98±0.26 ***	>0.05	8.23±0.16	8.83±0.16 **	>0.05
Heart rate (per 1 min.)	EG	85.12±3.13	83.12±3.00	>0.05	84.35±2.11	83.32±2.11	>0.05
	CG	85.32±3.23	84.32±3.21	>0.05	84.34±2.13	83.94±2.10	>0.05
ABP (systolic)	EG	98.12±2.31	100.12±2.31	>0.05	98.10±2.33	100.10±1.93	>0.05
	CG	98.42±2.31	99.42±1.21	>0.05	98.10±2.19	98.90±1.49	>0.05
ABP (diastolic)	EG	66.32±2.40	66.92±1.40	>0.05	65.21±2.01	66.99±2.01	>0.05
	CG	66.12±2.10	67.12±1.10	>0.05	65.29±2.11	65.89±1.91	>0.05

Note: *– p<0.05; * * – p<0.01,* * – p<0.001 when comparing parameters between the experimental and control groups at the end of a comprehensive study.

Sampling parameters became different in all criteria (null hypothesis was rejected, and an alternative with a significance level of α=0.05 and α=0.01 was accepted), which statistically confirms a significant difference between EG and CG results. Therefore, a significant difference (p <0.05–0.01) was found in the criterion of physical fitness in EG girls and boys in all parameters compared to the data of the ascertaining stage of the study: long jump, torso tilt, torso lift for 1 minute, static balance according to Bondarevsky's method, 30 m run. In CG girls and boys, there was only a slight improvement in the above parameters (p>0.05).

According to the somatic criteria, only 38 % (69 %) of girls aged 7–8 years had a low level of somatic health, below average – in 30 % (was 32 %), average – in 32 % (at the beginning of the study, no cases were indicated); in the age group of 9–10 years, the above levels were distributed as follows: 35 % (was 64 %), 42 % (was 29 %) and 23 % (was 7 %). Among girls aged 7–8 years, 67 % had a low level of physical health (67 %), and 33 % had a lower than average level of health (25 %); in the age group of 9–10 years – 57 % (64 %) and 43 % (29 %). After the application of the developed complex, a differentiated, multifactorial system of physical culture and recreational work in EG boys of 7–8 years, only 33 % had a low level of somatic health (was 66 %), 42 % had a lower than average (it was 34 %), and 25 % had an intermediate level (no cases were indicated at the beginning of the study); in the age group of 9–10 years, the above levels were distributed as follows: 33 % (was 64 %), 34 % (was 36 %) and 33 % (was 0 %), respectively.

According to the psycho-emotional criterion in EG girls and boys of 7–8 years and 9–10 years, we marked a significant (p<0.05–0.01) improvement in well-being, activity and mood at the end of the experiment. This indicates the normalisation of the psycho-emotional state of children as a result of the implemented physical culture and health work.

Thus, the results of the study mainly confirmed and expanded the conclusions of A. Dushka [4] on the need to create a system of medical and pedagogical measures, educational and rehabilitation areas based on special techniques and methods of correctional work, taking into account the individual potential of the child.

In addition, the results correlated with the studies of O. Vashchenko [2], A. Hlushchenko and A. Lugovskyi [3], on the study and expansion of the definition of the concept of rehabilitation support. We consider it as a system of medical and psychological-pedagogical measures aimed at improving the child's personality, the content of which is a process of purposeful and specially organized interaction of medical and educational institutions aimed at maintaining health, forming motivation for a healthy lifestyle. They involve the use of various physical means, forms and methods to improve the physical health of students, taking into account the peculiarities of their physical and mental development.

The developed system of correctional and health-improving work differs from previous solutions to the problem by differentiated selection of means of physical culture and health-improving programs, taking into account the factors of their orientation and consistent implementation of methodological, organizational and evaluation components. This can significantly improve the health status of children with complex developmental disorders.

Conclusions

1. The effectiveness of the developed complex, differentiated, multifactor system of organization of correctional and health work with children of primary school age with complex developmental disorders has been experimentally tested and confirmed. This is confirmed by the positive dynamics of all criteria and parameters: anthropometric, functional, physical, somatic and psycho-emotional in children of both sexes (girls and boys).

2. The main results of the study indicate significantly better parameters of the vital index in EG girls of 7–10 years compared to CG girls of 7–10 years by 4.87 % ($p<0.05$), strength index – by 3.24 % ($p<0.05$), Stange's test – by 3.78 seconds ($p<0.05$), Genchi's test – by 4.69 seconds ($p<0.01$), Ruffier's test – by 3.26 c.u. ($p<0.05$), Skibinski's index – by 2.32 c.u. ($p<0.001$). At the same time, there was a positive trend in EG boys aged 7–10 years, where recurrent vital signs were probably better than in CG boys aged 7–10 years by 3.00 % ($p<0.05$), strength index – by 3.97 % ($p<0.05$), Stange's test – by 6.98 seconds ($p<0.05$), Genchi's test – by 2.02 seconds ($p<0.01$), Ruffier's test – by 3.14 c.u. ($p<0.05$), Skibinski's index – by 2.33 c.u. ($p<0.001$).

The prospect of further research is the widespread implementation of a corrective and health program for children with severe developmental disabilities in the work of educational and medical institutions that provide comprehensive rehabilitation of children in this category.

References

1. Vashchenko OM. Osoblyvosti pobudovy zdorov'yazberezhuvalnoho osvitnyoho seredovyshcha pochatkovoyi shkoly. Zdorovya ta fizychna kultura. Kyiv; 2014; 4 (292): 2–9. [in Ukrainian]

2. Hlushenko KO., Hladkykh NV. Aktualni problemy navchannya ta vykhovannya dytey z kompleksnymy porushennyamy rozvytku v Ukrayini. Nauk. chasopys NPU imeni M. P. Drahomanova. Seriya 19 : Korektsiyna pedahohika ta spetsialna psykholohiya. Kyiv; 2014; 26. http://nbuv.gov.ua/UJRN/Nchnpu_019_2014_26_13 [in Ukrainian]

3. Dushka A. L. Osnovnyye prichiny i vidy psikhofizicheskikh otkloneniy u detey. Fundamental and applied researches in practice of leading scientific schools. Canada. 2014; 1: 38–52. DOI: 10.1111/josh.12578 [in Russian]

4. Kochyna ML, Bila AA. Rezultaty otsinyuvannya rivnya somatychnoho zdorovya studentiv riznoho viku. Ukrayinskyy zhurnal medytsyny, biolohiyi ta sportu. 2020; 5, 2 (24) 235–242 DOI: 10.26693/jmbs05.02.235 [in Ukrainian]

5. Kravchenko IL. Zahalna strukturno-funktsionalna model tsentriv medychno-sotsialnoyi reabilitatsiyi dytey z fizychnymy vadamy. Arkhitekturnyy visnyk Kyyivskoho natsionalnoho universytetu budivnytstva i arkhitektury. Kyiv. 2013; 1: 53–60. [in Ukrainian]

6. Leshchiy NP. Diahnostyka funktsionalnoho stanu ta fizychnoyi pidhotovlenosti dytey zi skladnymy porushennyamy rozvytku v umovakh navchalno-reabilitatsiynoho tsentru. Nauk. chasopys NPU imeni M. P. Drahomanova. Ser. 5: Pedahohichni nauky: realiyi ta perspektyvy. Kyiv; 2019; 69: 121–124 DOI https://doi.org/10.31392/2311-5491/2019-69.28 [in Ukrainian]

7. Mamicheva OV. Osoblyvosti dovilnoyi rehulyatsiyi molodshykh shkolyariv z tyazhkymy porushennyamy movlennya. Nauk. chasopys NPU imeni M. P. Drahomanova. Ser. 19: Spetsialna psykholohiya. Kyiv; 2019; 38: 180–186 DOI 10.31392/NPU-nc.series19.2019.38.26 [in Ukrainian]

8. Pohorilko OV, Skrypnikov AM, Herasymenko LO, Isakov RI. Autoahresyvna povedinka pidlitkiv: monohrafiya. Poltava: TOV "ASMI", 2017. 141 s. [in Ukrainian]

9. Shevchenko SM. Navchalno-reabilitatsiyni tsentry yak riznovyd rozvytku serednyoyi osvity dlya dytey z osoblyvymy potrebamy. Pedahohichni nauky, 2021; 77: 83–86 DOI: https://doi.org/10.33989/2524-2474.2021.77.239310 [in Ukrainian]

10. Beketova GV, Mozgova GP, Soldatova OV, Nekhaienko MI, Horiacheva IP, Alekseienko NV, et.al. Prevalence, clinical features, and prognosis of the psychosomatic pathology in children with psychophysical developmental disorders.Svit medytsyny ta biolohiyi. 2020; 1(71): 007–013. DOI 10.26724/2079-8334-2020-1-71-7-13.

11. Leshchiy NP, Pakhomova NG, Baranets IV, Kulbida SV, Yanovskaya TA, Sheremet MK, Suprun MO. Features of the physical and psycho-emotional state of children with. Svit Medytsyny ta Biolohiyi. 2021; 3(77): 91–96. DOI 10.26724/2079-8334-2021-3-77-91-96