

ASSESSMENT OF ADAPTATION OF CHILDREN OF YOUNGER SCHOOL AGE WITH CEREBRAL PALSY TO OCCUPATIONS AT CORRECTIONAL SCHOOL

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For citation: Ponomaryova OP, Suslova GA. Assessment of adaptation of children of younger school age with cerebral palsy to occupations at correctional school. *Pediatrician (St. Petersburg)*. 2018;9(2):55-66. doi: 10.17816/PED9255-66

Received: 19.02.2018

Accepted: 06.04.2018

Formation of a school maturity at children of younger school age is the main objective of modern education. Special attention in the last decades is paid to children with disturbances of a musculoskeletal system, in particular, to children with the cerebral palsy (CP). Such children study at special correctional schools which prepare the pupils for independent life and work in society. **Research objective:** to estimate adaptation of children of younger school age with cerebral palsy to occupations at correctional school. **Materials and methods.** 75 children with the diagnosis are examined: Cerebral palsy, spastic diplegia mild or moderate severity, delay of psychomotor development, pseudobulbar dysarthria. All children studied in state-funded educational institution for children with limited opportunities of health special (correctional) comprehensive school (the IV look) No. 584 "Ozerki" of Vyborgsky district of St. Petersburg (school No. 584 "Ozerki"). The age of children was from 7 to 11 years. The following indicators were estimated: quality of life of children by means of the questionnaire of PedsQL for category of children of 8-12 years, electroencephalogram indicators, the neurologic status, extent of disturbance of the speech. Children were examined by the neurologist, the psychologist and the logopedist. **Results.** 72% of children had the average and low level of adaptation. According to classification by L.A. Wagner (1989), "the low level" of adaptation prevailed at boys (42.2%) (the negative relation to school, suppressed mood, frequent complaints to an illness). "High level" also dominated at boys (33.4%) while at girls "the high level" of adaptation was observed only at 6 people (20%). Clinical inspection taped that at children the hyper excitability syndrome prevailed (at boys – 51.2%, girls – 63.3%). Also it was noticed that extent of disturbance of the speech depends on degree of a lesion of the central nervous system and also on age and sex features. The quality of life of children of elementary school is reduced. In scales of the questionnaire of PedsQL "physical functioning", "emotional functioning", "life at school" points don't exceed 50. Only in a scale "social functioning" an indicator more than 70 points. **Conclusions.** The complex rehabilitation including the medical, psychology and pedagogical and logopedic care is necessary for children of elementary school of school No. 584 "Ozerki".

Keywords: cerebral palsy; spastic diplegia; dysarthria; special correctional school; quality of life; adaptation to school; younger school age.

ОЦЕНКА АДАПТАЦИИ ДЕТЕЙ МЛАДШЕГО ШКОЛЬНОГО ВОЗРАСТА С ДЕТСКИМ ЦЕРЕБРАЛЬНЫМ ПАРАЛИЧОМ К ЗАНЯТИЯМ В КОРРЕКЦИОННОЙ ШКОЛЕ

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Для цитирования: Пономарёва О.П., Суслова Г.А. Оценка адаптации детей младшего школьного возраста с детским церебральным параличом к занятиям в коррекционной школе // Педиатр. – 2018. – Т. 9. – № 2. – С. 55–66. doi: 10.17816/PED9255-66

Поступила в редакцию: 19.02.2018

Принята к печати: 06.04.2018

Формирование школьной зрелости у детей младшего школьного возраста является основной задачей современного образования. Особое внимание в последние десятилетия уделяется детям с нарушениями опорно-двигательного аппарата, в частности, детям с детским церебральным параличом (ДЦП). Такие дети обучаются в специальных коррекционных школах, которые готовят своих учащихся к самостоятельной жизни и труду в обществе. **Цель исследования:** оценить адаптацию детей младшего школьного возраста с ДЦП к занятиям в коррекционной школе. **Материалы и методы.** Обследовано 75 детей с диагнозом: «ДЦП, спастическая диплегия легкой или средней степени тяжести, задержка психомоторного развития, псевдобульбарная дизартрия». Все дети обучались в государственном бюджетном образовательном учреждении для детей с ограниченными возможностями здоровья – специальной (коррекционной) общеобразовательной школе (IV вида) № 584 «Озерки» Выборгского района Санкт-Петербурга (ФГБОУ «Школа № 584 «Озерки»). Возраст детей составлял от 7 до 11 лет. Были оценены следующие показатели: качество жизни детей с помощью опросника PedsQL для категории детей 8–12 лет, показатели электроэнцефалограммы, неврологический статус, степень нарушения речи. Дети были осмотрены неврологом,

психологом и логопедом. **Результаты.** 72 % детей имели средний и низкий уровни адаптации. Согласно классификации по Л.А. Вагнеру (1989) «низкий уровень» адаптации преобладал у мальчиков (42,2 %) (отрицательное отношение к школе, подавленное настроение, частые жалобы на нездоровье). «Высокий уровень» также доминировал у мальчиков (33,4 %), в то время как у девочек «высокий уровень» адаптации наблюдался только у 6 человек (20 %). Клиническое обследование выявило, что у детей преобладал синдром гиперактивности (у мальчиков – 51,2 %, у девочек – 63,3 %). Также было отмечено, что степень нарушения речи зависит от степени поражения ЦНС, а также от возрастно-половых особенностей. Качество жизни детей начальной школы было снижено. В шкалах опросника PedsQL «физическое функционирование», «эмоциональное функционирование», «жизнь в школе» баллы не превышали 50. Только в шкале «социальное функционирование» показатель составил более 70 баллов. **Выводы.** Детям начальной школы ГБОУ школы № 584 «Озерки» необходима комплексная реабилитация, включающая медицинскую, психолого-педагогическую и логопедическую помощь.

Ключевые слова: детский церебральный паралич; спастическая диплегия; дизартрия; специальная коррекционная школа; качество жизни; адаптация к школе; младший школьный возраст.

INTRODUCTION

Currently, >166,000 children with cognitive impairment live in the Russian Federation, accounting for 32% of the total number of children with disabilities [3]. Childhood neurological disability is associated with pathology of the perinatal period in 60% of cases, and cerebral palsy is responsible for 24% of all cases of childhood disability [4].

Infantile cerebral palsy (ICP), a complex polyetiological neurological disease, is characterized by disorders in the function of the musculoskeletal system, emotional-volitional sphere, and intellect. ICP is residual states with non-progressive course. However, the clinical symptomatology may change, particularly at an early age, as a child develops. This is linked to the age-related dynamics of the morphofunctional interrelationships among the pathologically developing brain, growth of decompensation caused by an increasing inconsistency between the capabilities of the nervous system, and the requirements imposed by the environment on the growing organism [2].

Currently, there are >400 recognized causes of cerebral palsy. The causes may occur during the gestational period, the pathological process of labor, or the first 4 weeks of a child's life. In certain cases, the period of disease manifestation may be extended to 3 years [4, 8, 14]. According to studies, most cases of fetal brain activity disorders are observed during intrauterine development [4, 14]. The key causes leading to dysfunction during a child's brain development include prematurity, maternal chronic diseases, infectious diseases (may be in a latent form), pathology of pregnancy (e. g., threatening miscarriage, chronic miscarriage, toxicosis, and circulatory disorders in the placenta), hemolytic disease in a newborn, and obstructed labor (e. g., preterm delivery and malposition).

Difficulties of adaptation in children with cerebral palsy are determined according to the severity of the damage to the central nervous system (CNS). Prob-

lems in psychophysical development severely limit the independent social interaction of the child. It is also difficult for such children to adapt to school conditions, including those of remedial schools, often experiencing psychic tension, anxiety, refusing contact with adults and peers, and living in their world [5–7]. Children require long-term guidance/approval from an adult, leading to anger in response to comments, refusal to perform tasks, or aggression. Contact with classmates is established slowly and quite intensely [5, 7]. Rehabilitation of children with cerebral palsy involves performing activities aimed at achieving physical, mental, social, and economic adequacy.

The aim of the present study was to evaluate the adaptation of primary school-aged children with cerebral palsy to activities performed in the remedial school.

MATERIALS AND METHODS

The study included 75 children (aged 7–11 years) diagnosed with cerebral palsy, spastic diplegia of mild or moderate severity, delayed psychomotor development, or pseudobulbar dysarthria. All children attended the Federal State Budgetary Educational Institution (type IV) No. 584 “Ozerki,” a special (correctional) general education school for children with disabilities located in the Vyborg district of St. Petersburg, the Russian Federation. Children diagnosed with any type of epilepsy or episyndromes were excluded.

All children underwent examination prior to and after the study, including history recording, consultations with experts (neurologist, psychologist, speech therapist, and orthopedist), and electroencephalography (EEG).

RESULTS

The distribution of children according to sex and age is presented in Tables 1 and 2, respectively. The majority of children (56.7%) were aged between 8 and 9 years. The medical records of the mothers of these

children were also examined during history recording (Table 3).

The analysis of data revealed that 33 children (44%) were prematurely born. Moreover, in 24 cases (32%), mothers had been hospitalized because of threatening miscarriage or had a miscarriage (chronic miscarriage of pregnancy).

The primary complaints of children and their parents under study included periodic headaches (48 children, 64%), difficulty in the comprehension of “difficult” subjects, and difficulty of adaptation of first-graders to the educational process. The severity of headache was assessed according to the Wong–Baker scale from 0 “does not hurt” to 5 “it hurts unbearably” (Figure 1) [7]. The most commonly reported severities were “slightly hurts” (34 children, 45.4%) and “it hurts more severely” (14 children, 18.6%). The data are presented in Tables 4 and 5.

Clinical examination involved neurological, orthopedic, analysis of EEG indices (in particular α - and β -rhythms, including frequency, amplitude, index, waveform, regularity, and symmetry of the rhythm, and presence of paroxysmal activity), psycho-emotion-

al state, and speech function. The clinical characteristics of the children according to sex are presented in Table 6. The hyperexcitability syndrome predominated among the reported neurological syndromes. Orthopedic examination revealed five movement disorders, leading to the formation of deformities in the joints and spine such as dynamic equinus, adductor syndrome, hamstring syndrome, rectus syndrome, and spasticity of the hand. With dynamic equinus (26 children, 34.7%) in children walking on toes was formed, the knee joint was in a state of flexion. The adductor syndrome (21 children, 28%) was caused by the spastic contracture of the femoral adductors. Such children moved using wheelchairs or walkers. In those with hamstring syndrome (11 children, 14.7%) the gait with legs bent in knee joints was formed, and the feet were in the equinus position. Children with rectus syndrome (8 children, 10.6%) moved on straight legs and had hyperlordosis in the lumbar region with a pronounced pelvic inclination (forward). Hand spasticity was observed in nine children (12%) [11, 13].

In the EEG examination (Tables 7–9), norms and deviations from them were used as parameters for children aged 6–12 years [12]. In seven children (9.3%), the α -rhythm was not determined. The α -rhythm for frequency was observed below the norm in 23 children (30.7%). Regarding amplitude and index, the α -rhythm was normal in 13 (17.3%) and 37 (49.3%) children, respectively. The β -rhythm for frequency below 15 Hz was observed in 52 children (69.3%). Most pupils (48 children, 64%) had β -rhythm above the norm in terms of amplitude. Notably, the index of β -rhythm was normal in 49 children (65.3%). The presence of

Table 1 (Таблица 1)

Distribution of children on a gender
Распределение детей по полу

Boys Мальчики		Girls Девочки	
absolute number абсолютное число	%	absolute number абсолютное число	%
45	60	30	40

Table 2 (Таблица 2)

Distribution of children on age
Распределение детей по возрасту

Age group, years Возрастная группа, лет	Boys Мальчики		Girls Девочки		Total Всего	
	absolute number абсолютное число	%	absolute number абсолютное число	%	absolute number абсолютное число	%
7 7	7	15.5	4	13.3	11	15.1
8 8	17	37.8	13	43.4	30	39.6
9 9	9	20	4	13.3	13	17.1
10 10	5	11.2	5	16.7	10	13.1
11 11	7	15.5	4	13.3	11	15.1
Total Итого	45	100	30	100	75	100

Table 3 (Таблица 3)

Cerebral palsy etiology
Этиология детского церебрального паралича

Cause Причина	Boys Мальчики		Girls Девочки	
	absolute number абсолютное число	%	absolute number абсолютное число	%
Prematurity Premature birth Недоношенность Преждевременные роды	21	46.8	12	40
Chronic diseases of mother Хронические заболевания матери	10	22.2	5	16.7
Infectious diseases of mother (rubella, herp) Инфекционные заболевания матери (краснуха, герпес)	3	6.6	0	0
Discontinuing threat Chronic not incubation Угроза прерывания Хроническое невынашивание	11	24.4	13	43.3
Hemolytic illness at the newborn Гемолитическая болезнь у новорожденного	0	0	0	0
Wrong provision of a fetus Неправильное положение плода	0	0	0	0
Total Итого	45	100	30	100

Table 4 (Таблица 4)

Existence of the complaint “headache”
Наличие жалобы «головная боль»

Headache Головная боль	Boys Мальчики		Girls Девочки		Total Всего	
	absolute number абсолютное число	%	absolute number абсолютное число	%	absolute number абсолютное число	%
The headache is Есть	30	66.4	18	60	48	64
The headache is absent Нет	15	33.4	12	40	27	36
Total Итого	45	100	30	100	75	100



Fig. 1. Wong-Baker scale (1983)
Рис. 1. Шкала Вонга – Бейкера (1983)

Table 5 (Таблица 5)

Headache assessment on Wong-Baker scale (1983)

Оценка головной боли по шкале Вонга – Бейкера (1983)

Gender Пол	No hurt Не болит 0	Hurts little bit Немного болит 1	Hurts little more Болит сильнее 2	Hurts even more Болит значительно сильнее 3	Hurts whole lot Очень болит 4	Hurts worse Болит нестерпимо 5
	absolute number (%) абсолютное число (%)	absolute number (%) абсолютное число (%)	absolute number (%) абсолютное число (%)	absolute number (%) абсолютное чис- ло (%)	absolute number (%) абсолютное число (%)	absolute number (%) абсолютное число (%)
Boys Мальчики	15 (33.4)	22 (48.8)	8 (17.8)	0	0	0
Girls Девочки	12 (40)	12 (40)	6 (20)	0	0	0
Total Итого	27 (36)	34 (45.4)	14 (18.6)	0	0	0

Table 6 (Таблица 6)

Clinical characteristic of children

Клиническая характеристика детей

Syndromes Синдромы	Boys / Мальчики		Girls / Девочки	
	absolute number абсолютное число	%	absolute number абсолютное число	%
Syndrome of disturbance of a tonus Синдром тонусных нарушений	6	13.3	2	6.7
Hyper excitability syndrome Синдром гипервозбудимости	23	51.2	19	63.3
Syndrome of oppression of the central nervous system Синдром угнетения центральной нервной системы	6	13.3	3	10
Syndrome vegetovisceral of disturbances Синдром вегетовисцеральных нарушений	10	22.2	6	20
Total Итого	45	100	30	100
Degree of a spastic diplegia Степень тяжести спастической диплегии	Boys / Мальчики		Girls / Девочки	
	absolute number абсолютное число	%	absolute number абсолютное число	%
Mild Легкая	21	46.7	17	56.7
Average Средняя	24	53.3	13	43.3
Serious Тяжелая	0	0	0	0
Total Итого	45	100	30	100
Degree of a delay of psychomotor development Степень задержки психомоторного развития	Boys / Мальчики		Girls / Девочки	
	absolute number абсолютное число	%	absolute number абсолютное число	%
Mild Легкая	28	62.2	17	56.7
Average Средняя	17	37.8	13	43.3
Serious Тяжелая	0	0	0	0

Table 6 (continued) (Окончание табл. 6)

Syndromes Синдромы	Boys / Мальчики		Girls / Девочки	
	absolute number абсолютное число	%	absolute number абсолютное число	%
No delay Без задержки	0	0	0	0
Total Итого	45	100	30	100
Degree of a pseudobulbar dysarthria Степень псевдобульбарной дизартрии	Boys / Мальчики		Girls / Девочки	
	absolute number абсолютное число	%	absolute number абсолютное число	%
Mild (III) Легкая (III ст.)	26	57.8	13	43.3
Average (II) Средняя (II ст.)	19	42.2	17	56.7
Serious (I) Тяжелая (I ст.)	0	0	0	0
Total Итого	45	100	30	100
<i>Note.</i> The most expressed syndrome at the examined child is presented in the column “clinical syndrome”. <i>Примечание.</i> В графе «клинический синдром» представлен наиболее выраженный синдром у обследуемого ребенка.				

Table 7 (Таблица 7)

The characteristic α -rhythm
Характеристика α -ритма

Frequency Частота	Boys / Мальчики		Girls / Девочки	
	absolute number абсолютное число	%	absolute number абсолютное число	%
Is not defined Не определяется	4	8.9	3	10
Lower than norm (up to 7 Hz) Ниже нормы (до 7 Гц)	14	31.1	9	30
Normal (7-10 Hz) Норма (7–10 Гц)	27	60	18	60
Total Итого	45	100	30	100
Amplitude Амплитуда	Boys / Мальчики		Girls / Девочки	
	absolute number абсолютное число	%	absolute number абсолютное число	%
Is not defined Не определяется	4	8.9	3	10
Lower than norm (до 70 мкВ) Ниже нормы (up to 70 мкВ)	31	68.9	20	66.7

Table 7 (continued) (Окончание табл. 7)

Frequency Частота	Boys / Мальчики		Girls / Девочки	
	absolute number абсолютное число	%	absolute number абсолютное число	%
Normal (70-100 mcV) Норма (70–100 мкВ)	8	17.8	5	16.7
Higher than norm (more than 100 mcV) Выше нормы (более 100 мкВ)	2	4.4	2	6.6
Total Итого	45	100	30	100
Index Индекс	Boys / Мальчики		Girls / Девочки	
	absolute number абсолютное число	%	absolute number абсолютное число	%
Is not defined Не определяется	4	8.9	3	10
Lower than norm (up to 35%) Ниже нормы (до 35 %)	7	15.5	4	13.3
Normal (35%-60%) Норма (35–60 %)	24	53.4	13	43.3
Higher than norm (more than 60%) Выше нормы (более 60 %)	10	22.2	10	33.4
Total Итого	45	100	30	100
Symmetry Симметричность	Boys / Мальчики		Girls / Девочки	
	absolute number абсолютное число	%	absolute number абсолютное число	%
Is not defined Не определяется	4	8.9	3	10
Symmetric Симметричный	15	33.3	14	46.7
Nonsymmetric Несимметричный	26	57.8	13	43.3
Total Итого	45	100	30	100
Form of waves Форма волн	Boys / Мальчики		Girls / Девочки	
	absolute number абсолютное число	%	absolute number абсолютное число	%
Is not defined Не определяется	4	8.9	3	10
Regular form Правильная форма	30	66.7	17	56.7
The pointed form Заостренная форма	11	24.4	10	33.3
Total Итого	45	100	30	100
Regularity Регулярность	Boys / Мальчики		Girls / Девочки	
	absolute number абсолютное число	%	absolute number абсолютное число	%
Is not defined Не определяется	4	8.9	3	10
Regular Регулярный	3	6.7	9	30
Nonregular Нерегулярный	38	84.4	18	60
Total Итого	45	100	30	100

Table 8 (Таблица 8)

The characteristic β -rhythm
Характеристика β -ритма

Frequency Частота	Boys / Мальчики		Girls / Девочки	
	absolute number абсолютное число	%	absolute number абсолютное число	%
Lower than norm (up to 15 Hz) Ниже нормы (до 15 Гц)	35	77.8	27	90
Normal (15-35 Hz) Норма (15–35 Гц)	10	22.2	3	10
Higher than norm (more than 35 Hz) Выше нормы (более 35 Гц)	0	0	0	0
Total Итого	45	100	30	100
Amplitude Амплитуда	Boys / Мальчики		Girls / Девочки	
	absolute number абсолютное число	%	absolute number абсолютное число	%
Lower than norm (up to 15 mcV) Ниже нормы (до 15 мкВ)	12	26.7	6	20
Normal (15-20 mcV) Норма (15–20 мкВ)	7	15.5	2	6.7
Higher than norm (more than 20 mcV) Выше нормы (более 20 мкВ)	26	57.8	22	73.3
Total Итого	45	100	30	100
Index Индекс	Boys / Мальчики		Girls / Девочки	
	absolute number абсолютное число	%	absolute number абсолютное число	%
Lower than norm (up to 15%) Ниже нормы (до 15 %)	6	13.3	3	10
Normal (15%-45%) Норма (15–45 %)	29	64.5	20	66.7
Higher than norm (more than 45%) Выше нормы (более 45 %)	10	22.2	7	23.3
Total Итого	45	100	30	100

Table 9 (Таблица 9)

Existence of paroxysmal activity on an EEG
Наличие пароксизмальной активности на электроэнцефалограмме

Activity Активность	Boys / Мальчики		Girls / Девочки	
	absolute number абсолютное число	%	absolute number абсолютное число	%
There is an activity Есть активность	16	35.5	9	30
There is no activity Нет активности	29	64.5	21	70
Total Итого	45	100	30	100

Table 10 (Таблица 10)

Quality of life at children with a cerebral palsy according to patients

Качество жизни у детей с детским церебральным параличом по оценке самих пациентов

Gender Пол	Questionnaire scales Шкалы опросника				General Общее
	physical functioning физическое функционирование	emotional functioning эмоциональное функционирование	social functioning социальное функционирование	life at school жизнь в школе	
Boys Мальчики	40.4	45.44	73.88	49.36	41.82
Girls Девочки	43.4	47.98	72.8	49.16	42.6

Table 11 (Таблица 11)

Quality of life at children according to parents of patients

Качество жизни у детей по оценке родителей пациентов

Gender Пол	Questionnaire scales Шкалы опросника				General Общее
	physical functioning физическое функционирование	emotional functioning эмоциональное функционирование	social functioning социальное функционирование	life at school жизнь в школе	
Boys Мальчики	41.29	41	73.54	50.46	41.29
Girls Девочки	43.42	48.32	72.32	49.18	42.65

paroxysmal activity was predominantly observed in boys (16 children [35.5%]).

The psycho-emotional state of the children (quality of life) was assessed using the PedsQL questionnaire for children aged 8–12 years. This questionnaire is simple and convenient to use, with statistical processing and interpretation of the results. The questionnaire was completed by the children and their parents [9]. The results are presented in Tables 10 and 11. On the basis of the evaluation, the highest scores were observed in the scale of “social functioning” (>70 points).

All children were classified according to the level of adaptation to school assessed using the following classification established by A.L. Wagner (1989): high level, a child has a positive attitude toward school and perceives the learning material easily enough; average level, a child has a positive attitude toward school and performs tasks under the supervision of adults; and low level, a child has a negative attitude or is indifferent toward school, with depressed mood and frequent complaints of ailment (Tables 12 and 13) [10].

According to the data presented in Table 13, 8-year-old children showed the worst adaptation to school. All data were recorded in a “school adaptation card.”

This card assessed the learning activity, grasping of the program material, behavior in the classroom and during recess, relationship with classmates, attitude toward teachers, and emotions. Each point was evaluated on a visual analogue scale (0, very bad and 5, very good).

Following examination by a speech therapist, mild and moderate pseudobulbar dysarthria were reported in 39 (52%) and 36 (48%) children, respectively. In those with mild pseudobulbar dysarthria, speech was delayed and blurred, and while pronouncing the sounds [ts], [ʒ], [ʃ], [r], and [tʃ], there was insufficient voice participation, and some did not pronounce the sounds [ʒ], [ʃ], and [r]. In children with moderate pseudobulbar dysarthria, there was an inarticulate, blurred, soft speech; the sounds were pronounced with a strengthened nasal exhalation; and there was mixing of sounds [i] and [y], lack of clarity while pronouncing the sounds [a], [u], [ʒ], [ʃ], and [tʃ], and replacement of sonorous consonant sounds by the dull ones.

DISCUSSION

Children aged 8 years showed the worst adaptation to school. According to the classification in-

Table 12 (Таблица 12)

Adaptation according to A.L. Wagner (1989)
Адаптация по А.Л. Вагнеру (1989)

Level Уровень	Boys Мальчики		Girls Девочки		Total Всего	
	absolute number абсолютное число	%	absolute number абсолютное число	%	absolute number абсолютное число	%
High Высокий	15	33.4	6	20	21	28
Middle Средний	11	24.4	14	46.7	25	33.3
Low Низкий	19	42.2	10	33.3	29	38.7
Total Итого	45	100	30	100	75	100

Table 13 (Таблица 13)

Adaptation of children according to A.L. Wagner (1989) taking into account age
Адаптация детей по А.Л. Вагнеру (1989) с учетом возраста

Age, years Возраст, лет	High level Высокий уровень	Middle level Средний уровень	Low level Низкий уровень
7	2	5	4
8	8	9	13
9	4	2	7
10	3	4	3
11	3	4	4

troduced by L.A. Wagner (1989), low- and high-level adaptations were predominantly observed in boys (42.2% and 33.4%, respectively). Among girls, high-level adaptation was observed in only six children (20%).

Notably, the EEG examination revealed changes. Although α -rhythm was predominant, it was irregular in terms of frequency and amplitude and included sharp waves; its index ranged from 30% to 50%; and it had irregular slow-wave activity. In 9.3% of the children, α -activity was absent, whereas the index (26.7%) and amplitude of irregular slow oscillations had significantly increased. The oscillations differed in terms of frequency and did not have a rhythm, and their amplitude was medium or high. Further, parox-

ysmal activity was observed in one-third of the EEG examinations.

According to the PedsQL questionnaire, the quality of life of children attending school reduced. The highest score was observed in the column “social functioning” (>70 points). In the “physical functioning,” “emotional functioning,” and “life in school” columns, the score did not exceed 50. In particular, “physical functioning” showed the lowest scores (41.9 and 42.4 points as reported by children and parents, respectively). Overall, these data indicate that children experienced difficulties in movement; this included 12 children (16%) using wheelchairs and 9 (12%) using walkers, whereas the remaining children had characteristic features in their gait. The quality of life of

boys was lower than that of girls, as assessed by the children and their parents.

Analysis of the “school adaptation cards” showed that children had difficulty in completing tasks at school. Children with cerebral palsy belonged to the category of “sickly children” (presence of non-specific disorders of immunological reactivity) [1]. These children often missed classes (occasionally for a long time), leading to social disadaptation.

Analysis of speech disorders demonstrated that severity of speech disorders depends on the age–sex characteristics and the extent of CNS damage. Distortions, omissions, and substitutions of similar syllables and sounds are often noted in the speech of children.

CONCLUSIONS

In children with cerebral palsy, improvement in quality of life and adaptation to school is possible through the integration of educational, upbringing, treatment, rehabilitation, and correction processes, including the provision of medical, psycho-pedagogical, and logopedic aid. Children attending the school No 584 “Ozerki” require comprehensive rehabilitation.

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