

UDC 376.352-053«465.00/.07»  
BBC Ч453.091  
GSNTI 14.43.43  
Code VAK 13.00.03; 13.00.08

**V. M. Sklyadneva**  
Moscow, Russia

### **EFFECT OF PERINATAL PATHOLOGY ON PSYCHOLOGICAL DEVELOPMENT OF VISUALLY IMPAIRED INFANTS**

**Abstract.** The article presents the results of a comparative study of clinical information about the health of 52 visually impaired infants and the data about their psycho-pedagogical observation. The article describes the methods of psycho-pedagogical diagnostics of orientation response and the analysis of information about its development in visually impaired infants. It shows that visually impaired infants have multiple health problems, limited abilities of perception of visual stimuli and psychological problems in communicating with the environment. The combination of these negative factors determines a delay in the formation of psychological properties of infants, expressed in different degrees: in infants with multiple perinatal pathology and loss of visual acuity – by 1–2 developmental (epicrisis) periods, and in infants with a combination of perinatal pathology and residual vision – by 3–4 developmental (epicrisis) periods. The complex structure of secondary social consequences of the disease specifies the necessity of providing psycho-pedagogical support for the infants at hospitals of the second and third stages of nursing in order to realize their psychological development potential.

**Keywords:** disabilities, ophthalmic diseases, psychological dysontogenesis, neuropsychological development disorders, at-risk infants, special educational needs, social compensation, early rehabilitation.

**About the author:** Sklyadneva Veselina Mikhaylovna, Educational Psychologist.

*Place of employment:* Laboratory of Special Psychology and Correctional Education, Research Institute for Preventive Pediatrics and Medical Rehabilitation, Federal State Budget Scientific Institution “Scientific Center of Children’s Health”.

The child’s first year of life is a critical and unique stage of ontogenesis. It is at this period that extremely fast formation of morphological and functional systems of the child’s organism, including the visual one, takes place. Timely appearance of new and more sophisticated psychological achievements is predetermined not only by the natural development of the organism in accordance with the genetic program but also by social life conditions which either provide or hamper the child’s

possibility to collect the necessary sensory and practical experience [3, pp. 52-62; 4, pp. 56-64]. It is common knowledge that normal brain functioning, physical health, preservation of perception organs, correct upbringing and well-being of social environment facilitate optimal rate of psycho-physical development at each stage [1; 12].

Health impairments including malfunctioning of an organ or the organism on the whole hamper timely formation of new developmental psy-

chological phenomena at early stages of ontogenesis [6, pp. 89-99; 7, pp. 29-34]. Visual and hearing disorders whose social consequences include limiting incoming information from the environment call forth distorted perception of objects, space orientation problems and degradation of control and effectiveness of movements [3, pp. 52-62; 14; 15].

As long as vision plays the key role in the development of the child psychology visual system impairments leads to sensory deprivation which, in its turn, prevents timely harmonious involvement of the child in culture and social realization [6, pp. 89-99; 10; 12].

In recent years, the ratio of children with perinatal pathology aftereffects has reached 36%. Over 40% of children with perinatal lesions of the central nervous system have visual impairments; 20% of such children develop a visual disability at an early age. As a rule, visual impairments are accompanied by other disorders or appear as a consequence of negative effect of another illness upon the immature visual system, for example, retinopathy of premature babies. Depending on etiology and peculiarities of the course of the illness the child's vision may remain stable or may gradually deteriorate [2; 3, pp. 52-62; 13].

Infants with disabilities and ophthalmic pathology often spend the first months of their life at hospitals of the second and third stages of nursing. Their health rehabilitation is performed with the help of high technology kinds of medical assistance, as well as non-medical methods of

treatment (massage, swimming, medical physical fitness exercises); if necessary, multistage complex rehabilitation treatment is realized [2; 14].

At present, under the Federal law of November 21, 2011 # 323-ФЗ "On the Foundations of Health Protection of Citizens in the Russian Federation" medical rehabilitation is defined as a system of events of medical and psychological character. The new law guarantees the right of one of the parents or another family member to stay free of charge with the child of four years of age and younger at a hospital during the whole period of his treatment (bed and food are provided by the hospital). The parents are provided psychological support and taught how to look after their child and bring him up successfully using effective methods and techniques.

But the peculiarities of visual perception and psychological interaction of children with limited sensory capabilities (visual impairment) need maximally early creation of special developing environment conditions and application of special methods of teaching and upbringing, as early as the moment of diagnosis of the disability [3, pp. 52-62; 5; 8]. The given methods should be used both in the process of treatment and in the child's family education.

In order to work out the content of rehabilitation pedagogical support for the child it is necessary to know the degree of disability and the functional potential of the analyzer, i.e. the ability to perceive incoming information, general state of health,

actual psychological achievements and the developmental potential [6, pp. 89-99; 7, pp. 29-34; 11].

**Research materials.** We studied anamnestic data and results of a series of psycho-pedagogical observations of 52 children aged 2.29-3.29 months with visual pathology of various etiology and degree (the data were obtained through medical histories analysis).

The following **methods** were used in the process of research: interviewing parents with the aim of studying social atmosphere in the family, observation of independent behavior in daytime activities, analysis of the child's medical documentation (case history) and data about his health, and psycho-pedagogical observation for revealing and assessment of peculiarities of neuro-psychological development of infants (according to the methods created by G. V. Pantyukhina & K. L. Pechora, E. L. Frukht and using the schedule of neuro-psychological observation of infants (SNOI) by G. V. Kozlovskaya).

**Organization of observation.**

The diagnostic procedure began by interviewing the child's doctor about the general state of the child's health; in the process of the talk we found concrete data about optimal sensory load and the time of stimulating intervention during teaching. We also tried to find out the necessity of creating special conditions in order not to deteriorate the somatic and neurological state of the infant (for example, during epileptic seizures).

Psycho-pedagogical observation was carried out during the morning or

midday wake period before or immediately after feeding [4, pp. 56-64; 5].

In order to study the peculiarities of formation of the psyche of infants with visual impairments we adapted the existing domestic methods of diagnostics of neuro-psychological development of infants. The diagnostic tools were supplemented with various sensory manuals which provided a possibility to register unconditioned responses of infants with visual impairments [9; 14].

We used multisensory playing aids during the diagnostic procedure: bright flashing toys of different texture and with loud sound which allowed us to stimulate and initiate perception of different analyzers at the same time.

Rattles with the sound of different intensity were used to define the quality of child response to acoustic stimuli. While studying visual perception both usual toys of natural color and large, bright and contrasting (including black-and-white) toys were used. The motor activity of children was stimulated by styled and vibrating toys and by changing the quality of the surface on which the child lay and shifting the position of his body in space. To diagnose hand movements we have chosen bright toys with textured surface making sounds when pressed.

The child's emotional state and methods of contact with close adults were registered in the course of observation the interaction between mother and child in everyday situations: feeding, bathing, swaddling, putting to sleep, etc. These situations

were chosen because they are created by close relatives and are reproduced regularly. This allows revealing the conditions of development of first social behavioral responses and individual habits: emotional interaction between mother and child, the child's ability to recognize a close person by means of contact and distant analyzers and communication means.

Information about the infant collected in the process of observation was supplemented with the information received in the course of structured interviews of the parents about the peculiarities of feeding, daily timetable formation and perception of incoming stimuli by the infant [1; 8].

While analyzing medical documentation (case history) we studied the following data:

- the course of pregnancy (threat of spontaneous abortion, toxicosis, intoxication, diseases of mother and child, methods of their treatment, etc.),

- peculiarities of childbirth and possible pathological consequences (trauma, hypoxia, etc.),

- the child's age, health, primary and accompanying diagnosis including the state of the organ of vision at the moment of psycho-pedagogical observation;

- information about visual examination of doctors-specialists and laboratory and instrumental diagnostics of the organs and systems of the child organism.

The data of the complex observation of 52 infants with visual impairments were put down in a psycho-pedagogical chart and electronic table.

**Research results.** Comparison

of clinical and psycho-pedagogical information allowed us to obtain knowledge about the peculiarities of behavior and psychological achievements of the first months of the infant's life and reveal the potential of his psychological development, define special educational needs and outline perspectives of psycho-pedagogical support of infants at the second stage of nursing.

Analysis of anamnestic data showed that all 52 infants were born prematurely. 13.4% (7) of the infants were born on the 26<sup>th</sup>-27<sup>th</sup> week of gestation with extremely low body weight (less than 1000g); about half of the infants – 48% (25) of the total number – on the 29<sup>th</sup>-31<sup>st</sup> week of gestation with a very low body weight (from 1001g to 1500g); 28.8% (15) of the infants were born on the 32<sup>nd</sup>-35<sup>th</sup> week of gestation with a body weight from 1501g to 2000g; and 9.6% (5) of the infants – on the 36<sup>th</sup>-37<sup>th</sup> week with a body weight from 2001g to 2500g. All infants had multiple consequences of perinatal pathology in the form of various deviations in the functioning of organs and systems because of which they were transferred to the department of the second stage of nursing for a rehabilitation course of treatment.

Analysis of clinico-psycho-pedagogical information showed that according to the degree of degradation of visual perception, peculiarities of orientation responses and behavior, lagging of actual psychological achievements behind the developmental norm, infants with multiple perinatal pathology can be united into two groups.

Group I was made up of 63.4% (33) of visually impaired infants with psychological development delay of 1-2 epicrises at the adjusted age; according to the schedule of neuro-psychological observation of infants (SNOI) their score constituted 40-50 points and was considered to be an impairment. These infants had various ophthalmic diseases (2<sup>nd</sup>/3<sup>rd</sup> degree retinopathy of premature babies, amblyopia, clouding of the lens in the eye) and visual acuity of more than 0.06, as well as multiple consequences of perinatal pathology; because of all this such infants were referred to the 2<sup>nd</sup>/3<sup>rd</sup> groups of health level.

Group 2 united 36.5% (19) of infants with residual vision (visual acuity less than 0.05) as a result of the 4<sup>th</sup>/5<sup>th</sup> degree of retinopathy of premature babies or optic atrophy combined with various chronic diseases and the 4<sup>th</sup>/5<sup>th</sup> groups of health level, psychological development delay of 3-4 epicrises at the adjusted age at which the score constituted 20-25 points according to the schedule of neuro-psychological observation of infants (SNOI); i.e. we observed a considerable impairment of neuro-psychological development.

For detailed description of medico-psycho-pedagogical data and typical behavioral responses of infants we decided to present the information about neuro-psychological development of infants of each group separately.

The infants of group 1 demonstrated temporary orientation activity during wake period. They made searching movements with the head, tried to locate the external source of

the sound or light, but could not get the required result independently. Low effectiveness of orientation efforts could be attributed to several reasons: physiological ones (low range of eye or head movements, exhaustible activity) and social ones (remote location of sensory stimuli and low intensity of their impact). All this lead to the situation when psychological activity went down after 1-2 minutes, and the infants grew passive. It was possible to revive their interest only by means of direct tactile and emotional contact. Changes in the infants' behavior could be also seen while applying contrasting tactile (texture, thermal, vibration) and olfactory stimulus. Emotional and tactile contacts, the same as sensory stimuli of high intensity called forth starting, blinking, slowing down and then activation of movements and mimic responses. Unfortunately, all these pedagogical techniques: emotional and tactile contact, impact of intensive visual stimuli in the form of large bright and contrast objects – did not help the adult to make the infant concentrate on an object. It was only after using prolonged complex sensory stimulation in the form of short-time (2-3 seconds) exposure of the organ of vision to mild light flux simultaneously reinforcing the infant's interest to the external stimulus by means of sound and tactile incentives and after presenting illuminated objects at a certain angle of vision that the specialist managed to make the child concentrate on the illuminated object or the adult's face and try to follow the object with his

eyes. It is necessary to note that after prolonged sensory stimulation the infants of this group demonstrated momentary fixation of the eyes on the adult's face or a large bright object without special sensory means or pedagogical methods.

Analysis of clinical information about the state of the infants' organs of vision showed that the peculiarities of visual perception revealed in the process of psycho-pedagogical observation were caused by a decrease in vision due to amblyopia conditioned by strabismus and the 2<sup>nd</sup>/3<sup>rd</sup> degree retinopathy of premature babies and clouding of the lens in the eye.

A positive distinctive psychological feature of the infants of this group was the fact that intensive external sensory stimulation caused positive emotions and aroused the need to communicate with grown-ups. It manifested itself in "excitement complex", smiling in response to an address and separate glottal sounds of the "cooing" type.

In the course of emotional communication infants quietly reacted to a change of their position in space. While taking them in the arms, the head was supported for not longer than 1-2 seconds; in this connection the adult had to constantly control its position, make it and the infant's body comfortable, because he cannot do it himself, cannot change his position and informs about discomfort and pain by crying with different intonation. The task of the teacher at that time was to induce the infant to perform searching movements with his head and eyes and visually find a

sensory stimulus. But the infants could not reach these results on their own; they could not set their eyes on nearby objects. After a complex sensory stimulation they demonstrated the ability to concentrate attention and to follow an illuminated toy with their eyes. But when the toy touched the fist, the fist did not open and the hand did not move upward; it only caused isolated involuntary finger movements. A rattle put in the infant's hand by a grown-up stimulated activation of movements due to new tactile perceptions; it also caused the mimicry of concentration and search of a stimulus with his eyes without a chance of reaching the aim independently.

Similar movement and behavior peculiarities were observed in infants lying flat on their stomach. All of them tried to lift up their head but immediately put it down or tilted it back; the majority of them could not find a comfortable posture. Only 7 infants managed to turn their head to a comfortable position after many attempts. Visual concentration in this posture could not be achieved even after a prolonged complex sensory stimulation. One minute later all of them began to attract the attention of the adult by grunting and crying thus informing that they were experiencing discomfort and needed help. Negative attitude to the situation did not allow switching the attention of the infant over and arousing interest in external sensory stimuli. The infants' behavior changed only when they were taken in the arms and given a physiologically correct and comfortable posture.

In the close person's arms they quickly calmed down and continued to be passively awake, seldom making disordinated involuntary movements with their body and arms.

Everything mentioned above shows that the infant demonstrates lagging behind the developmental norm (age adjusted) by not more than 1-2 epicrises. With this variant of psyche formation, the infant scores 40-50 points according to the schedule of neuro-psychological observation of infants, which is considered to be an impairment of neuro-psychological development.

The above enumerated peculiarities of primary orientation responses and behavior of the infants under observation were caused by lowering of functional capabilities of the organism and of the visual analyzer in particular.

Analysis of clinical information about the state of infants' health showed that all of them had multiple neurological and somatic disorders the number of which in a separate child was not more than 5 different deviations. Thus, 100% of infants had respiratory diseases, 81.8% – cardiovascular disease (congenital heart defect (CHD), *repolarization of ventricular myocardium* disorders, incomplete right bundle branch block, etc.), 75.7% – diseases of the endocrine system (*hypothyreosis*, enlarged *pancreas*, etc.), 60.6% – diseases of the urogenital system (right kidney agenesis, vicarious hypertrophy, pyelectasis, etc.), 90.9% of infants had gastrointestinal *diseases* (erythroblastosis fetalis, gastrointestinal dysfunction, etc.). The following conse-

quences of ischemic-hemorrhagic lesions of the central nervous system were registered: in 86% of cases – ventriculomegaly, in 30.3% of cases – agenesis of the corpus callosum, in 100% of cases – brain immaturity, in 15.1% of cases – *pronounced cerebral edema*, after bypass grafting – clinical features of meningitis, in 86.5% of cases – *subependimal pseudocysts on both sides*.

Multiple perinatal pathology was caused by health impairments and risk-laden obstetric history of the parents of these infants. And we registered low level reproductive health of young parents under the age of 35. All families of children with visual impairments and psychological development delay of 1-2 epicrises were complete, and a small number of parents (21%) had experience in bringing up other previous children and taking care of them. Analysis of the parents' questionnaire and the relatives' interview results showed that all of them were aware of the peculiarities of behavior and psycho-emotional development of their children, were really upset and emotionally distressed. They all without exception were interested in the help of a specialist in the child psychological development and wished to get individual psycho-pedagogical recommendations in his upbringing and education. The majority of families – 76.4% (25) – tried hard to master pedagogical technologies and used them during treatment at the hospital of the second stage of nursing; they understood the importance of their role in the psychological develop-

ment of the infant. Other families – 23.5% (8) – believed that the result of special education fully depended on the specialist, did not try to master pedagogical techniques, seldom used them in the infant's wake period and constantly needed to be stimulated to create developing environment for their child during daytime and to be demonstrated the urgency of their own emotional interaction with the infant. And practically all parents realized the importance of following the recommendations and prescriptions of the doctor, listened to their advice and tried to follow it exactly, carefully looked after their child's health and were fully oriented towards treatment and saw its value.

A different kind of behavior and another social situation of development were revealed with children of the second group. All of them were passive and demonstrated an almost blotted out quickly passing need of impressions and a negative attitude to new sensory stimuli. A strong enough unexpected incoming stimulus of the kinesthetic analyzer caused an involuntary conditioned response in the form of shrinking, starting, insignificantly increasing motor activity and muscle tone. The infants needed attention and presence of an adult but did not initiate contact with them; they remained calm and paid no attention to what was going on around them. Left alone, they grew restless and after a short time tried to draw the adult person closer to them by crying with increasing intensity to feel more comfortable and safe. During wake periods the motor activity

of the infants was low, the movements of the limbs were disordinated, and the mimicry was monotonous and poorly differentiated. 72.7% of infants had increased general muscle tone; forced pathological body posture was observed in the lying position, muscle tension and tone increased in the course of performance of a motor act. 27.2% (9) of infants demonstrated a lowered muscle tone; the body in the lying position was flat; the infants made no attempts to move their limbs or change the posture. The infants responded to a change in the position of their body in space with annoyed screaming and a grimace of discontent, did not try to shift the position of the limbs, could not take a comfortable position in the arms of a grown-up, did not raise their head when lying on their stomach, did not try to turn their head aside even after lengthy tactile stimulation of the muscles of the back. It was a grown-up person who could put them in a safe and comfortable position; they did all to have it done by granting and crying. In a comfortable posture, granted by an adult, the infants could be involved in communication and could get in involuntary contact with the material world. In this connection, psycho-pedagogical observation of the infant was carried out with the child in the arms of his mother. It became evident that elementary physiological responses to sensory stimuli could be observed only in a special environment and sensory stimuli of high enough intensity, including light, after repeated (3-4 times) stimulus presentation. Pur-



positive stimulating the skin and olfactory analyzers brought about a fuzzy orientation response to the novelty: slowing down motor activity, mimicry of concentration, movement of the eyeballs and the head towards the source of stimulus without trying to look for it. It was possible to make the infant relax the wrist and open the fist without further raising the hand by gentle stroking movements of soft brushes along the infant's arm. It is necessary to note that the infants did not try to hold a small textured easy to hold toy put into their hand; they made no feeling movements either. In all infants, the reaction to a bright sound stimulus put close to their ear was in the form of starting, stopping feeding, and, less often, immediate breaking off motor activity without fixing the eyes on anything but giving up crying. Similar behavior was observed in response to the sound of the voice of the mother or a grown up stranger. Active attempts of the teacher and close people to call forth the infant's response of setting his eyes on something, changing facial expression and activation of movements through emotional interaction were futile and made it possible only to watch the generalized response of concentration.

It was impossible to make the infant fix his eyes on the adult's face or object by usual diagnostic techniques. While providing special conditions (light, color, sound and tactile) producing stimulating effect on several analyzer systems simultaneously, it was possible to see instant involuntary setting the eyes on a source of

soft light in a proportion of infants (48%). The direct contact of the light flux with the retina caused blinking, sudden fixation, papillary response at the change of light intensity, as well as change of facial expression: a grimace of discontent, raising eyebrows and concentration. Other infants (13 %) did not give any visual reflex response to light stimulus; their behavior at this moment did not change. But a few seconds after the sensory stimulation of the visual analyzer they demonstrated movement of the eyeballs and insignificant increase of motor activity, i.e. there appeared motor discontent which could be characterized as an unconditioned motor response to sensory stimulation of the visual analyzer. Complex sensory stimulation brought about fast fatigue, growing discomfort and excitement. These peculiarities of behavior and functioning of the central nervous system needed termination of the contact with the infant and breaking up psycho-pedagogical observation. Mothers put their children in a comfortable position, dandled them in the arms to calm them, patted them on the back and talked with them in a calm and low voice. After 2-5 minutes of calm the infants began to make separate sounds and by limited chaotic movements tried to attract the adult's attention. Marked specificity of psychological development of these infants in correspondence with the chosen methods may be characterized as psychological development delay of 3-4 epicrises (age adjusted); such infants scored 20-25 points. This score range was defined as neuro-

psychological development disorder.

It is necessary to note that the peculiarities of psycho-motor development, including visual perception, were caused by perinatal pathology which led to premature birth (26<sup>th</sup>-28<sup>th</sup> week of gestation), visual impairment as a result of the 4<sup>th</sup>-5<sup>th</sup> level retinopathy and optic nerve atrophy. The infants of this group were referred to the 5<sup>th</sup> group of health because they had different deviations in the functioning of organs and systems of different etiology and level: 100% of infants had respiratory diseases, 94.7% – cardiovascular disease (*repolarization of ventricular myocardium* disorders, incomplete right bundle branch block, etc.), 94.7% – diseases of the endocrine system (*hypothyreosis*, enlarged *pancreas*, etc.), 100% – diseases of the urogenital system (right kidney agenesis, vicarious hypertrophy, pyelectasis, etc.), 100% of infants had gastrointestinal diseases (*reactive state of the liver*, erythroblastosis fetalis, gastrointestinal dysfunction, etc.). The following consequences of ischemic-hemorrhagic lesions of the central nervous system were registered: amaurosis, epilepsy, interventricular hemorrhages and *subependymal pseudocysts*, ventriculomegaly, agenesis of the corpus callosum, brain immaturity, and hydrocephalus.

Multiple perinatal pathology was caused by health impairments and risk-laden obstetric history of the parents of these infants. All parents were over the age of 30. All families were complete, the parents were officially married, had a profession, job and accommodation; in 20% of cases

there were other children in the family, i.e. the parents had experience in bringing up children and knew the developmental norms. All families were oriented towards medical assistance, realized its significance and dependence of the child's health on its quality and systematic provision. They carefully followed the doctors' recommendations and actively mastered the technologies of taking care and rehabilitating the infant's health. The majority of parents – 79% (15) – were worried about the present and future psychological development of their baby and were interested in the methods of activation of the infant's psychological potential. All parents were aware of certain peculiarities of behavior of their children which seriously worried them; they listened to the specialist's advice and wished to get individual psychopedagogical recommendations in his upbringing and education. 21% (4) of families did not realize the importance of the infant's learning at this age. Due to this, in the course of individual developing sessions with the child the pedagogue-defectologist had to improve the parents' pedagogical competence by explaining to them the importance of their acquisition of special rehabilitation-pedagogical technologies.

As a result of the undertaken research it was stated that contact with the environment causes in infants with severe multiple disabilities and considerable impairments of the visual analyzer negativism and discomfort in psychological activity, including changes of the surrounding situa-

tion and the position of the body in space from the very first days of their life. This fact creates obstacles to the realization of the inborn need of novelty, cognition and psychological interaction with the environment. Due to this fact, the need of psychological interaction gradually dies out, and the formation of new, more modern kinds of interaction with the environment is late to come, the same as the emergence of new daily rhythm. Without purposive intervention of a specialist – teacher-defectologist, and with no systemic, specially organized sensory stimulation socialization of the children is hard to achieve. In connection with the fact that systematic intervention in the psychic development of infants can be effected by a mother or another close person, there appears the necessity to teach parents special pedagogical technologies. In order to make the parents realize the importance of special training in realization of the psychological potential of infants with multiple disabilities and satisfaction of their special educational needs it is necessary to acquaint parents at the hospitals of the second and third stages of nursing with methods of pedagogical intervention in the psychological development of the child and provide them any kind of psycho-pedagogical assistance. Rehabilitation-pedagogical technologies should become part and parcel of the process of the child's rehabilitation/abilitation. Such activity of hospitals would facilitate timely provision of pedagogical information for the parents about the creation of such conditions of education and up-

bringing (social situation of development) which would help them realize the physiological, intellectual and emotional potential of the infant.

**Conclusions:**

–infants with multiple perinatal lesion of the CNS and visual impairments demonstrate specific development of the health and the whole psyche;

–first unconditioned responses and orientation behavior caused by sensory stimuli develop later than the ontogenetic norm and have the following peculiarities: fuzzy manifestation, exhaustible nature and inconsistency;

–the existing methods of testing neuro-psychological development of infants do not allow revealing urgent and potential psychological abilities of infants with multiple disabilities and limited functions of analyzers and should be improved;

–it is necessary to use sensory stimuli of high intensity (light, bright colors, contrast drawing) and stimulate several analyzers simultaneously to register visual unconditioned responses and orientation behavior in children with multiple perinatal pathology in the course of observation;

–specially organized sensory stimulation makes it possible to reveal the zone of proximal development and learning potential of infants with multiple perinatal pathology of the CNS and outline the directions of rehabilitation support;

–infants with multiple perinatal pathology and visual impairments can be subdivided into two groups according to the quality and peculiarities of manifestation of unconditioned

responses and orientation behavior: one group comprises infants who demonstrate easily exhaustible unconditioned responses and orientation behavior to complex sensory stimuli of medium intensity; the other group includes infants who also show easily exhaustible unconditioned responses but orientation behavior is not present when they are subjected to complex sensory stimuli of high intensity;

–specificity of development of unconditioned responses and orientation behavior in infants is defined by etiology and severity of perinatal pathology and by the level of impairment of the visual analyzer;

–the combination of disabilities and psychological development demands the necessity of combining medical and pedagogical technologies in the process of rehabilitation treatment, which would allow us to timely reveal children with violations of the tempo of psychological development, as well as work out a complex rehabilitation program, assess its effectiveness with the help of clinical and psycho-pedagogical methods and figure out the future rehabilitation and pedagogical path of the infant.

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