

PSYCHOLOGICAL DEFENSE MECHANISMS OF CHILDREN WITH CEREBRAL PALSY IN THE CONTEXT OF MOTHERS ATTITUDE TO A CHILD'S DISEASE

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Introduction. Cerebral palsy (CP) has a significant prevalence in industrialized countries and is characterized by a high level of disability. Children and adolescents with CP face challenging situations. Physical defects repeatedly manifest in the daily life of a child in the form of other extraordinary events such as hospitalization, surgery, prolonged immobilization, and separation from family. Such events can be accompanied by feelings of fear, anxiety, helplessness, and pronounced symptoms of maladjustment. Under these conditions, certain biological and social compensatory manifestations help to identify such complicated conditions and restore the normal functioning of the body. Compensatory manifestations are a type of compensatory defense mechanisms. The major role in establishing a system of protection is played by the relationship between a child and his or her parents. Defense mechanisms can be formed during the process of assimilation of protective parental behavior, or because of the inappropriate attitude of mothers to the child's illness. The purpose of the research was to study the defense mechanisms in children with CP in the context of mothers' relationship to her child's illness.

Materials and methods. The research involved 120 people. The experimental group included 30 children with CP aged 5 to 11 years and their mothers. The control group consisted of relatively healthy children (30) and their mothers. The following was used to achieve the goal: the elements of clinical and biographical method, projective technique, the technique of diagnostics of attitude to the child's illness.

Results and discussion. The repertoire of psychological defense mechanisms in children with CP is limited in comparison with those in healthy children. Children with CP are dominated by the defense mechanism of "denial" that can play a negative role in the process of adaptation of these children in a situation involving complex treatments. The mothers of children with CP share an emotionally intense relationship with their child's disease. Excessively disturbing attitudes of the mother to the disease of her child can contribute to the formation of negative psychological defense mechanisms of negation type in the child, which reduces the child's psychological compensatory capacity and capability of adaptation in conditions of complex treatment.

Keywords: cerebral palsy, children, parent – child relationships, psychology.

ПСИХОЛОГИЧЕСКИЕ ЗАЩИТНЫЕ МЕХАНИЗМЫ У ДЕТЕЙ С ДЦП В КОНТЕКСТЕ МАТЕРИНСКОГО ОТНОШЕНИЯ К БОЛЕЗНИ РЕБЕНКА

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Введение. Синдром детского церебрального паралича (ДЦП) — распространенное заболевание в индустриальных странах, которое характеризуется высоким уровнем инвалидизации. Дети и подростки, страдающие ДЦП, оказываются в трудной жизненной ситуации. Физический недостаток многократно тиражируется жизненной ситуацией ребенка в виде других экстраординарных событий: госпитализации, хирургические операции, длительная иммобилизация, отрыв от семьи. Такие события в жизни детей с ДЦП могут сопровождаться переживаниями страха, тревоги, беспомощности, выраженными проявлениями дезадаптации. В этих условиях большое значение имеют биологические и социальные компенсаторные проявления, способствующие восста-

новлению нормального функционирования организма и личности. Компенсаторные проявления психологического уровня связаны с работой механизмов психологической защиты. Большую роль в становлении системы защиты играют отношения между ребенком и его родителями. Защитные механизмы могут формироваться у ребенка в процессе усвоения родительских форм защитного поведения, а также в результате неадекватного отношения матери к болезни ребенка. Цель исследования — изучение защитных механизмов у детей с ДЦП в контексте материнского отношения к болезни ребенка.

Организация и методы исследования. В исследовании приняли участие 120 человек. В экспериментальную группу вошли 30 детей, страдающих ДЦП в возрасте от 5 до 11 лет, и их матери. Контрольную группу составили относительно здоровые дети (30 человек) и их матери. Для достижения поставленной цели были использованы элементы клинико-биографического метода, проективная методика САТ, методика диагностики отношений к болезни ребенка (ДОБР).

Результаты исследования и их обсуждение. Репертуар психологических защитных механизмов у детей с ДЦП ограничен по сравнению со здоровыми детьми. У детей с ДЦП преобладает защитный механизм «отрицание», что может играть негативную роль в процессе адаптации детей в ситуации сложного восстановительного лечения. У матерей детей с ДЦП преобладает эмоционально-напряженное отношение к заболеванию ребенка. Избыточно тревожное отношение матери к заболеванию своего ребенка может способствовать формированию психологической защиты по типу отрицания у ребенка с ДЦП, что снижает его психологический компенсаторный потенциал и возможности адаптации в условиях сложного восстановительного лечения.

Ключевые слова: детский церебральный паралич, дети, детско-родительские отношения, психология.

Introduction

Infantile cerebral palsy (CP) is a common movement disorder occurring in industrialized countries (2–2.5 per 1,000 population) and is characterized by a high level of developmental disabilities (up to 70%) [1-5]. It develops as a result of lesions in the brain and spinal cord due to various causes during the early stages of intrauterine development of the fetus and during childbirth. An increase in the efficiency of the prevention of nervous system impairment during intrauterine development of the fetus has been observed in recent years; obstetric techniques have improved, reducing the risk of developing CP [4, 5]. At the same time, the mortality rate among preterm and low-birth-weight infants who have a significant risk of developing CP is decreased [1-3].

The main clinical symptoms of CP are impaired motor function associated with arrested development, incorrect formation of statokinetic reflexes, abnormal muscle tone, and pareses. In addition to central nervous system disorders, changes in nerve and muscle fibers, joints, ligaments, and cartilage occur repeatedly throughout life [1, 2, 5]. In most cases, impaired perceptual actions, gnostic functions, speech, sight, and hearing are observed [3, 4]. Phylogenetic and ontogenetic development of the brain during the postnatal period plays an important role in the pathogenesis of mental disorders in children with CP; underdevelopment or abnormal

development of the brain leads to pronounced motor pathology and sensory deficiency, which may be one of the causes of impaired cognitive and intellectual development [3, 4].

Cerebral palsy has been classified into different forms based on the predominant clinical criteria [2-5]. In Russia, the classification by Semenova [4, 5] is most commonly used, which includes five main forms of CP: double hemiplegia, spastic diplegia, hemiparetic form, hyperkinetic form, and atonic-astatic form. In clinical practice, the mixed form of CP is additionally distinguished [4]. According to motor defects, the severity of CP has been categorized into three degrees for all listed forms of the disease: mild, moderate, and severe [2, 4, 5]. Spastic diplegia and the mixed form are the most common forms of CP. Spastic diplegia is a variant of CP in which the legs are most commonly affected. In children with spastic diplegia, secondary mental retardation is often observed, and primary mental retardation is less often noted. In 70% of children with spastic diplegia, paralalia in the form of dysarthria is observed, whereas alalia is much less often noted [2, 4]. At the same time, the mixed form of CP can be classified as spastic diplegia. As children with spastic diplegia grow and develop, symptoms characteristic of the other forms of CP may appear. Motor disorders developing with age often require restorative surgical treatment [5].

Children and adolescents with CP face difficult challenges in their life. The image of physical defects in children with CP are repeatedly replicated through hospitalization, surgical intervention, prolonged immobilization, and isolation from the family [4, 6, 7]. Such events in the life of children with CP can be accompanied by experiences of fear, anxiety, helplessness, and marked manifestations of disadaptation. Under these conditions, biological and social compensatory manifestations that contribute to the restoration of the normal functioning of children and their personality are of great importance.

Psychological compensatory mechanisms remarkably expand the possibilities of biological and social compensation [8]. Specific psychological manifestations of compensation are associated with the mechanisms of psychological defense. From the viewpoint of modern researchers, psychological protection is a system of personality stabilization that protects human consciousness from traumatic experiences, leveling out feelings of discomfort and anxiety associated with difficult life circumstances and inner conflicts. In other words, psychological defense mechanisms are considered as processes of intrapsychic adaptation of the personality due to the subconscious processing of incoming information [9, 10]. To reduce the level of discomfort and anxiety, the mechanisms of psychological protection can distort the initial information, thus changing the behavior of a person. At the same time, excessive tension of subconscious compensatory activity can serve as an obstacle for adequate awareness of the situation and harmonious interaction of a person with a society [9, 10].

Psychological defense mechanisms are formed during ontogenesis and are associated with children's level of mental development. Negative experiences as conditioned by experiencing and overcoming difficult life situations lead to the formation of a system of psychological defense mechanisms that determine a child's behavior in such situations. The predominance or frequent use of a single protective mechanism can lead to a violation of social adaptation. The same protective mechanisms may have different meanings in the social adaptation of a child at different stages of development. During childhood, the mechanisms of psychological protection are as follows: substitution, repression, isolation, suppression, negation, projection,

regression, imitation, symbolization, rationalization, and fantasy [9-11].

Substitution is a psychological defense mechanism to level anger. In this case, children channel their aggression either on themselves or on a neutral object (shifted aggression) to relieve their tension. Substitution is manifested in the form of active (hyperactivity) and passive (sleep disturbance, somatic complaints, and situational anxiety) behavioral acts. This type of protection can be manifested in young children to determine their physical well-doing and emotional well-being.

Repression is "forgetting" the feelings, thoughts, and desires that cause discomfort. However, these psychological phenomena that are repressed in the unconscious mind require constant tension to retain negative feelings in the subconscious mind that influences the behavior of children [9-11].

Isolation (or alienation) is a protective mechanism that denotes the dissociation of feeling, action, or desire with other aspects of life [10]. At the same time, children with CP switch from reality and plunge into their own world, that is, the world of dreams. In children of preschool and primary school age, this protective mechanism decreases anxiety, emotional reaction, affective problems, hyperactivity, and somatic complaints [10].

Suppression is a protective mechanism that blocks fear by forgetting its source as well as the circumstances associated with it [9]. A high level of suppression is associated with an increase in the level of problems such as alienation, somatic complaints, attention problems, anxiety, disobedience, and severe disturbances of mental and social adaptation [9, 10].

Negation is a protective mechanism that denotes the negation of a traumatic event. A high level of negation is associated with an increase in the level of somatic complaints, failure of attention, a high level of anxiety, behavior disorders, and difficulties in social adaptation [9-11].

Projection is a protective mechanism that designates the attribution to another person or a thing of qualities, feelings, and desires that children with CP reject within themselves. In children with CP of preschool age, this protective mechanism helps reduce anxiety. In children with CP of school age, the activation of this protective mechanism is accompanied by aggressive behavior, sleep disorders, and disobedience [9-11].

Regression is a protective mechanism that represents the return of feelings and actions to that stage of mental development when these actions were successful and feelings were experienced as pleasure. In children with CP of preschool age, this protective mechanism decreases anxiety, aggressive behavior, somatic complaints, and emotional reactivity, which positively affects the process of social adaptation. In children with CP of school age, this mechanism causes high anxiety and disobedience.

Imitation is an unconscious emotional self-identification with another person. It is an immature form of identification that is a pronounced desire to imitate a certain person and to simulate the behavior of another person. Identification contributes to coping with feelings and forms of behavioral features (e.g., personality characteristics) and ensures the interaction of children with CP with the surrounding social environment [9].

Symbolization is a protective mechanism during which a particular meaning or logical explanation is attributed to a psychological phenomenon. In children with CP of preschool age, a high degree of development of symbolization leads to hyperactivity and attention problems. In children with CP of school age, the development of symbolization contributes to reduction in affective problems, somatic complaints, and anxiety.

Rationalization is a protective mechanism that justifies thoughts, feelings, and behavior unacceptable for children with CP. It contributes to the partial removal of discomfort. It appears in the late stages of ontogenesis, contributes to the preservation of self-respect, and helps avoid responsibility and feeling guilty [10].

Fantasy is escape from real problems to the world of imagination [9-11].

The relationship between children with CP and their parents plays an important role in the development of the protection system. Protective mechanisms are formed in children with CP during the process of assimilation of parental forms of protective behavior, as well as a result of disharmonious variants of child-parent relationship, in particular as a result of inadequate attitude of the mother toward the disease of the child [13, 14].

The present study aimed to investigate protective mechanisms in children with CP in the context of the mother's attitude toward the child's disease.

Materials and Methods

A total of 120 people participated in the present study. The experimental group comprised 30 pediatric patients with CP and aged 5–11 years and their mothers. The control group comprised 30 relatively healthy children and their mothers. Pediatric patients with CP were admitted to a pediatric orthopedic clinic for surgical treatment. Mothers accompanied their children to a surgical hospital for restorative treatment. The examination of mothers and their children was performed individually while they were staying in the hospital at the stage of preparation for surgical treatment. Mothers of pediatric patients and healthy children voluntarily signed an informed consent form to participate in the study.

To achieve the aim, the elements of the clinical and biographical method, the Children's Apperception Test (CAT) with the use of projective technology and the diagnosing attitude toward the child's disease (DACD) method were used [7, 9, 12]. The experimental and psychological examination has two stages. In the first stage, the clinical and demographic characteristics of a child were examined, and the level of the child's intellectual development was measured. On the basis of the results of the first stage, an experimental group was formed, which included children with one of the several forms of CP, namely, spastic diplegia of mild and moderate severity. All pediatric patients with CP had movement difficulty. Almost all pediatric patients with CP had a complicated medical history (pathology of labor, prematurity in 70% of cases). Early development was characterized by arrested psychomotor development. Those pediatric patients without any gross abnormalities in intelligence were enrolled in the experimental group. According to the results of the logopedic examination of pediatric patients with CP, insignificant disorders of the pronunciation of speech were revealed in the form of erased dysarthria or as dyslagia. In the second stage, the mechanisms of psychological protection using the CAT and measuring the parameters of the parent's (mother's) attitude toward the child's disease were studied [9, 12]. The CAT is used to study the system of relationships, that is, the motivational sphere of a child aged 5–11 years. The CAT with the use of projective technology determines the attitude of the child toward various

aspects of life, including the protective mechanisms that the child uses in a situation involving traumatic experiences.

The CAT comprises 10 pictures depicting animals in different situations. The patient is consistently presented with 10 pictures, for each of which they must compose a short story. The results were processed with the use of the Mary R. Howarth scheme to interpret the patient's protective mechanisms. This technique enables the identification of the following psychological protection mechanisms that occur during childhood: substitution, repression, isolation, suppression, negation, projection, regression, imitation, symbolization, rationalization, and fantasy.

Using the DACD method, the mother's attitude toward the child's disease was studied. This method assesses the mother's attitude toward her child's disease using the following indicators: internality, anxiety, nosognosia, activity control, and general tension. High scores on the internality scale describe the external control of the child's disease, in which the causes of the disease are perceived by the mother as being beyond her efforts. Low scores indicate internal controls, in which the mother ascribes to herself the responsibility for all manifestations of her child's disease. High scores on the anxiety scale describe the expressed anxiety of the mother regarding her child's disease. Moderately expressed anxiety characterizes a harmonious attitude toward the child's disease. The extreme degrees of negation of anxiety indicate a distorted perception of the child's disease by the mother. High scores in the nosognosia scale describe the exaggeration of the child's disease by the mother (hypergnosia). Low scores indicate an underestimation or neglect of the severity and consequences of the disease (hyponosognosia and anosognosia). High scores in the activity control scale describe the tendency of the mother to set maximum limits to the child's activity for the duration of the disease. Low scores tend to underestimate the necessity of observing the regime for limiting activity. High scores in the general tension (T) scale describe the general emotional and tense attitude of the mother toward her child's disease [7, 12].

All results obtained were processed by statistical methods using Statistica 6.0. Evaluation was performed using Student's *t*-test. To determine differences in signs expressed in percentages,

Fisher's exact test was used. Correlation analysis was performed using Spearman's coefficient. A value of $p < 0.05$ was considered statistically significant.

Results and Discussion

The comparison of the frequency of use of protective mechanisms by pediatric patients with CP with that by relatively healthy children showed that pediatric patients with CP use negation significantly more often than healthy children (see Table 1). In contrast, relatively healthy children use rationalization, isolation, substitution, regression, identification, and fantasy significantly more often than pediatric patients with CP. The results obtained reveal that the repertoire of protective mechanisms involved in overcoming difficult life situations and inner conflicts through the elimination of emotional problems is broader and more flexible and mature in relatively healthy children than in pediatric patients with CP. In pediatric patients with CP, dangers are overcome mainly through negation, which can contribute to the manifestation of infantile behavioral responses, reducing the possibility of adaptation in difficult life situations, for example, in a hospital environment due to surgical treatment. Because of this, pediatric patients with CP strive to take their minds off painful experiences and feelings associated with medical interventions, ignore reprimands and instructions from medical personnel, and reject unwanted events, showing active or passive protest reactions. As shown in a previous study by Russian authors, in children of preschool and primary school age, the frequency of activation of protective mechanisms by the type of negation is consistent with an increase in the level of anxiety, accompanied by an increase in affective problems and somatic complaints [10]. A follow-up of those children in a hospital revealed that they have behavioral problems more often, such as disobedience, ignoring the requirements and reprimands of adults, and difficulties in physical therapy.

Compared with mothers of relatively healthy children, there was a significant increase in the values of the indicators in the anxiety scale, general tension scale, internality-externality scale, and nosognosia scale in the mothers of children with CP (Table 2). In parents who raise children with CP, the anxiety reactions to the child's disease

Table 1

Comparison of the protective mechanisms of pediatric patients with infantile cerebral palsy with those of relatively healthy children (according to the Children's Apperception Test)

| Protective mechanisms | Children with cerebral palsy | Relatively healthy children | Fisher's exact test | The level of reliability of differences |
|------------------------|------------------------------|-----------------------------|---------------------|---|
| | % | % | <i>t</i> | <i>p</i> |
| Negation | 76 | 46.6 | 2.45 | ≤ 0.01 |
| Repression | 10 | 10 | 0 | - |
| Rationalization | 3.4 | 26.7 | 2.78 | ≤ 0.01 |
| Projection | 60 | 70 | 0.81 | - |
| Isolation (alienation) | 57 | 80 | 1.98 | ≤ 0.05 |
| Substitution | 1 | 23.3 | 3.88 | ≤ 0.001 |
| Regression | 6.6 | 46.6 | 3.8 | ≤ 0.001 |
| Identification | 36.7 | 83.3 | 3.8 | ≤ 0.001 |
| Suppression | 13.4 | 10 | 0.40 | - |
| Symbolization | 26.5 | 36.5 | 0.82 | - |
| Fantasy | 0 | 26.6 | 4.19 | ≤ 0.001 |

Table 2

Comparison of parental attitudes of parents of children with cerebral palsy and parents of relatively healthy children (according to the technique of diagnostics of attitude to the child's illness)

| Parental attitudes towards children's illness | Pediatric patients with cerebral palsy, <i>n</i> = 30 | Relatively healthy children, <i>n</i> = 30 | The level of reliability of differences |
|---|---|--|---|
| | <i>M</i> ± <i>S</i> | <i>M</i> ± <i>S</i> | <i>p</i> |
| Internality | -0.17 ± 8.23 | -4.40 ± 5.65 | ≤ 0.05 |
| Anxiety | 7.77 ± 5.82 | 4.53 ± 5.63 | ≤ 0.05 |
| Nosognosia | 0.87 ± 9.00 | -5.17 ± 5.99 | ≤ 0.01 |
| Activity control | 8.43 ± 7.00 | 6.97 ± 4.11 | - |
| General tension | 4.58 ± 4.84 | 0.50 ± 3.50 | ≤ 0.001 |

Note: *M* is the arithmetic mean deviation, *p* is the confidence level, *S* is the mean-square deviation of the differences, and *n* is the number of subjects.

prevail, as well as their emotional and tension attitude toward the child's disease and the treatment situation as a whole. Parents of children with CP who adequately perceive the severity of the disease and the complexity of medical rehabilitation often experience a state of helplessness. They think that the rehabilitation process and severity of the child's condition are not under their control and that their influence on rehabilitation activities is minimal.

According to the correlation analysis results, there was a remarkable direct relationship between

the indicator reflecting the psychological defense mechanism of negation and the parameter of parental setting according to the anxiety scale ($r = 0.47$, $p < 0.05$). The interrelations indicate that the mother's anxious reactions to the child's severe disease can contribute to the formation of the protective mechanism of negation in children and, consequently, a decrease in the child's adaptive capabilities, suggesting the appearance of behavioral problems in the process of complex restorative treatment.

Conclusion

The repertoire of psychological protective mechanisms in children with CP is limited compared with that in healthy children. In children with CP, the protective mechanism of negation predominates and can play a negative role in the process of the adaptation of children in a situation of complex rehabilitation treatment.

Among mothers of children with CP, an emotional and stressful attitude toward the child's disease prevails. The mothers of children with CP feel helpless in a situation of complex rehabilitation of the child.

An excessively anxious attitude of a mother toward her child's disease can contribute to the formation of the psychological defense mechanism of negation in a child with CP, reducing their psychological compensatory potential and adaptability under conditions of complex rehabilitation treatment.

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