

# Age Dynamics of Deviant Behavior and Mental Pathology Among Patients with Residual-Organic Neurosis-Like Disorders

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## ABSTRACT

The experience of domestic and foreign clinicians shows that the real possibilities of overcoming school and social maladjustment are associated with a correct assessment of the diagnostic significance of clinical manifestations of behavioral and mental disorders. Among the various variants of mental pathology, borderline neuropsychic disorders are often encountered, accompanied by various forms of impaired behavior and social and labor maladjustment. The choice of a rational method of treatment and highly effective medical and social rehabilitation are possible only if there is accurate information about the mechanism of occurrence and dynamics of mental and behavioral disorders. The purpose of this research: to study clinical and pathogenetic patterns and age-related dynamics of behavioral and mental disorders in patients with a neurosis-like state of residual organic genesis. Methods of research: psychodiagnostic, clinical-anamnestic, radiological, principles of age dynamics (the main stages of ontogenesis), clinical-psychopathological, catamnestic, clinical Yale-Brown Obsessive and Symptom Checklist, statistical ("SPSS 16.0" and Excel from Microsoft Office 2003).

Results: clinical scale of obsessions and compulsions Yale-Brown (Yale-Brown Obsessive and Symptom Checklist), statistical ("SPSS 16.0" and Excel from the package "Microsoft Office 2003).

The carried-out research has allowed allocating clinical variants of clinical and pathogenetic laws and age dynamics of behavioral and mental disorders at patients with neurosis-like condition of the residual-organic genesis. The research presents the identification and study of features of formation and dynamics of various forms of deviant behavior in the clinic of neurosis-like states of residual-organic genesis. Study of typology of obsessive-compulsive symptom complex gives possibility to develop the program of complex treatment that essentially improves quality of life of the given research contingent.

Keywords: Neurosis-like conditions of residual-organic genesis, Deviant behavior, Obsessive-compulsive disorders

## INTRODUCTION

The main feature of residual-organic neuropsychiatric disorders in children and adolescents is the complexity of the clinical picture and insufficiently studied dynamics. The questions of dynamics of these disorders are of special interest. Kovalev V.V., in 1987, has stated the position that exogenous-organic factors can pass from the category of external to the category of internal conditions, causing residual-organic cerebral insufficiency, or organically altered reactivity of the brain. Its signs lose their independent clinical significance, however long-lasting (or even lifelong) persist in the form of subclinical changes in brain structures and functional state, becoming a factor of "altered soil"<sup>1</sup>.

The importance of studying clinics and dynamics of neurosis-like states of residual-organic genesis is determined not only by constant growth of borderline states in the general structure of mental diseases, but also by their resistance to therapy, tendency to a prolonged course which breaks the normal formation of the adolescent personality<sup>2</sup>.

The research is based on the conceptual idea according to which the disorders caused by pre-, perinatal factors, refer to the residual-organic neuropsychiatric disorders which are based on early organic brain damage<sup>3-5</sup>.

## METHODS

When selecting publications as potential sources of evidence, the methodology used in each study is examined to ensure its validity. The result of the study affects the level of evidence assigned to the publication, which in turn affects the strength of the recommendations arising from it. The methodological study was based on several key questions that focused on those features of the study design that have a significant impact on the validity of the results and conclusions<sup>6,7</sup>.

The study was based on the study of 165 patients who had suffered early childhood organic brain lesions of various natures and the subsequent development of various forms of deviant behavior and psychiatric disorders, over the period 1990-2020.

## LITERATURE REVIEW

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The subjects were under treatment with simultaneous education in a sanatorium boarding school for children with psychoneurological diseases. This contingent was examined at the LMA "Psychiatry" in Kiev and at the departments of radiology and psychiatry, psychotherapy and medical psychology of the Scientific and Research Hospital of Ukraine named after P.L. Shupyk. The control group is represented by 25 healthy people without any deviations in behavior and psyche, and with absence of symptoms of residual cerebral-organic insufficiency<sup>8,9</sup>.

An average age of the surveyed was  $32.5 \pm 11.0$  years: men -  $31.0 \pm 9.4$  years, women -  $32.9 \pm 12.7$  years. The discrepancies between the age characteristics of men and women are statistically insignificant ( $p > 0.05$ ). The duration of the disease ranged from 3 to 31 years, with an average of  $14.3 \pm 7.6$  years<sup>8,10</sup>.

At the first stage of the study, 165 patients with cerebral residual-organic insufficiency were screened, as a result of which a group with neurosis-like states with an astheno-dynamic variant was formed. The group included 64 patients. In addition, using the ICD-10 criteria, a group was formed, which included 96 patients (58.2%) with a diagnosis of obsessive-compulsive disorder<sup>8,10</sup>.

#### Features of Behavior Disorders in the Group with Asthenodynamic Option:

The early period of development was characterized by the presence of various manifestations of "organic" neuropathy. Clinically it was expressed in the phenomena of sensory excitability and motor inhibition, manifested by a sharp startle, prolonged monotonous crying at the slightest occasion. Such displays were often subtle to adults. Often there was a tendency to vegetative disorders and spasms of smooth muscles. Delayed psychomotor development was observed here, though it was minimal and was expressed mainly in somewhat later (in comparison with the age norm) appearance of speech and walking, emotional reactions, etc. Motor skills of children in the group with astheno-dynamic syndrome were marked by some angularity; movements were somewhat slow, not always harmonious. Hypomimia, fearfulness, timidity and lethargy were characteristic for the children we studied. In a strange environment they behaved extremely constrained, they did not aspire to contact. According to the analysis of anamnestic information, many of them had a tendency to dyspepsia (13%), enuresis (19%), vomiting (6%). Sleep disorders (16%), accompanied by nightmares and difficulty waking up, were detected. Against a background of constant anxiety and fearfulness, the most frequent reactions were fears of the dark (11%), loneliness<sup>11,12</sup>.

During the period of the first age crisis all these phenomena intensified, became more expressed and were accompanied by caprice, irritable weakness, tearfulness, stubbornness. There were also negativistic reactions (29%), manifested with affective discharges followed by rapid exhaustion, somnolence and hysteroid inclusions, but also with symptoms of irritable weakness, helplessness.

In general, for those studied with the astheno-dynamic variant, there was less disadvantage in signs reflecting delayed psychomotor development. However, according to physiological norms, these children often grow up to be physically weak and more prone to somatic diseases.

It is necessary to note that at this stage, in this group, 42% of observations of deviations in behavior were connected with personal features distinguished by low differentiability (anxiety, vulnerability, obstinacy, capriciousness). These disorders conditioned difficulty of adaptation of children in the environment of peers; however, had qualitatively other character.

Thus, summarizing the above, we can assert that these disorders in children with the astheno-dynamic variant were less massive, were noted less frequently and contributed to a more complete readiness for school. Deviations detected at this stage in children were undifferentiated and manifested through difficulties in contacts with others due to anxiety, shyness, vulnerability, a relatively long-lasting decrease in moods inherent in these deviations.

At the stage II of age crisis, there were features on clinical manifestations of mental disorders and their frequency<sup>13</sup>.

In the group of children with the astheno-dynamic syndrome, although there was some increase in the symptomatology of the previous period, there was no outlined decompensation. Manifestations of hypodynamism remained practically unchanged (35%), cerebrastrhenic disorders (headaches, fatigue, irritable weakness) were more pronounced. At the same time, monosymptomatic neurotic reactions in the form of bedwetting (30%), stuttering (16%) became more frequent. The tendency to differentiation of the personal features was noted. Anxiety and lack of self-confidence, shyness became more and more distinct. In this connection and behavior was determined by such qualities as impressionability, fear of independent decisions, leading to a lack of communication, to isolation from noisy companies of peers, a tendency to seclusion.

On entering school many of these children were quite prepared for learning, could read and write. However, owing to the inhibition of their reactions, they could not adapt quickly in a school community, and during the answers in lessons, they had a feeling of confusion. When teachers (shouting and irritation) approached such children incorrectly, their negative attitude toward learning appeared rather quickly. Their progress was mediocre, despite the absence of deviations in the intellectual and mental sphere. The present negative emotions, the prevailing lowered mood, personal features were the reason for the children's lack of tolerance in the peer group, and their poor adaptability to the requirements of school discipline. Infrequently observed absences from classes and school-leaving had in the basis the aspiration to get rid of something unpleasant, to fulfill a certain requirement and rather effectively yielded to timely and adequate medical and pedagogical correction.

In patients with the astheno-dynamic variant, the frequency of maladaptation was found to be lower. When studying interpersonal relations using the method of unfinished sentences, we noticed that those with the astheno-dynamic variant were characterized by insecurity about themselves and their abilities, primitive imagination, naive unconditional acceptance of authority, with physical superiority mainly chosen, there was no tendency for leadership and subordination dominated. There was an absence of sufficient affection to relatives, feelings of guilt, anxiety for committing a transgression, absence of criticism of the painful condition.

With the beginning of puberty, an increase in the formation of various forms of behavioral disorders with a stage of expressed mosaic clinical picture was observed. The mosaicity, at the same time, was defined not only by the considerably expressed phenomena of cerebral aging, but also by various manifestations of the psychological crisis of maturation.

The analysis of the observations has shown a high frequency (42%) of manifestations of cerebrastrhenic decompensation. The beginning of its emergence was promoted by exogenous-organic harmfulness (27%), violations of the sequence of development of secondary sexual signs (Table 1).

**Table 1:** Characteristics of somato-endocrine maturation in the studied groups (absolute number, %)

Puberty type	Group I n = 82	Group II n = 64	Control group n = 25	P
Normal timing, including:				
a) harmony	9 - 10.9	8 - 12.5	17 - 68	0.05
b) disharmony	48 - 58.5	39 - 60.9	2 - 8	0.05
Acceleration	19 - 23.2	-	5 - 20	0.05
Retardation	6 - 7.3	17 - 26.5	14	0.05

The following symptoms became sharply outlined: exhaustion and decrease of work capacity, hyperesthesia in the form of intolerance to various stimuli, noise in the head, dizziness, and headaches. Vegetative disorders were aggravated, characterized by instability of physiological administration, thermoregulation, sweating, and paresthesia. Effects of hypertension and in some cases (11%) vascular crises with increased blood pressure, sinus tachycardia, chills, pale skin were noted.

A number of adolescents at the height of fatigue had cardiac rhythm disturbances, discomfort in the heart area, hyperalgesia in the epigastric region. Such manifestations of diencephalic disorders as transient thirst, unstable appetite and others were detected only in isolated cases of observations. Apparently, this fact is a confirmation of the correlation of diencephalic disorders with the rate and massiveness of puberty. These disorders are most common in the accelerated rate of maturation. In our observations (Table 1), however, no cases with accelerated pace of puberty were identified.

The observed emotional instability was manifested by a rapid change of affect with a tendency to low mood, excessive tearfulness, irritability and capriciousness. Simultaneously, the form of sleep was disturbed, falling asleep was difficult, sleep became shallow, and waking up in the morning was not accompanied by a feeling of vivacity and rest.

As indicated, a comparative analysis of the mood data in the two groups revealed a number of significant differences. Thus, in the study group, these disorders were observed significantly less frequently (55% of observations) - there was no euphoria, and the predominant background was a lowered mood. Dysphoric episodes in the group with the asthenodynamic syndrome were twice as rare (30% of Group I and 13% in Group II). Another essential feature of mood disorders episodes in adolescents with the asthenodynamic variant was their long duration (up to 1-2 days).

During this period, difficulties in assimilation of the school program became noticeable. The adolescents under study became distracted, poorly absorbed the material in lessons. There were reactions of refusal to go to school, to fulfill any requirements, as an expression of protest with an increase of reticence and isolation. The phenomena of pronounced pedagogical neglect were recorded less frequently (7%) than those of Group I adolescents. According to our data for patients with asthenodynamic variant in 34% of cases deviant behavior was manifested only at the beginning of puberty, during which it turned out to be a qualitatively new phenomenon without any analogues in childhood. It is necessary to emphasize that (at this stage) the data on the peculiarities of the course of the somato-endocrine metamorphosis and the psychological crisis of maturation are of particular value for determining the expression and nature of deviant behavior<sup>14</sup>.

According to our data, dysharmoniousness was predominantly determined in the observed group (61%), but an accelerated type of

development was not observed, and retardation was characteristic of 27% of those observed. Addiction disorders in patients closely correlated with features of somato-endocrine metamorphosis and unfavorable influence of socio-psychological factors. Observed disorders of desire in adolescents with the asthenodynamic variant (31%) were less pronounced, frequent, and often manifested as masturbation, transient homosexuality, which had a different coloring than in the study group.

A comparative analysis of the clinical manifestations of the psychological crisis of maturation revealed reliable differences in a number of signs in the studied groups (Table 2). The differences we found concerned not only the frequency of certain signs, but also their nature, massiveness, concurrence, and persistence.

**Table 2:** Features of the psychological crisis of maturation

Manifestations of the psychological crisis of maturation	Number of observations (absolute number, %)		
	I group n = 82	II group n = 64	P
<b>a) Reflexive tendency</b>			
1. Egocentric sense of justice	11 - 13.4	-	
2. Denial of authority	17 - 20.7	3 - 4.6	
3. Opposition	21 - 25.6	1 - 1.6	
4. Criticism against adults and others	25 - 30.5	-	
5. Thirst for new experiences	7 - 8.5	-	> 0.05
<b>b) Propensity for auto reflection</b>			
1. Painful perceptions of self	-	8 - 12.5	
2. Striving for exclusivity	2 - 2.4	11 - 17.2	
3. Interest in sexual relations	27 - 38.5	16 - 25	
4. Tendency to the emergence of psychological complexes	7 - 8.5	15 - 23.4	> 0.05
<b>c) Teenage hobbies</b>	39 - 47.5	8 - 12.5	> 0.05
<b>d) Teenage introversion and vulnerability</b>	6 - 7.3	42 - 65.6	> 0.05
<b>e) Nonspecific age-related forms of response</b>			
1. Propensity for reactions of active protest	36 - 43.9	3 - 4.6	
2. Propensity for passive protest reactions	2 - 2.4	18 - 28.1	
3. Propensity for compensation reactions	-	26 - 40.6	
4. Propensity for hyper compensation reactions	-	15 - 23.4	
5. Propensity for emancipatory reactions	19 - 23.1	3 - 4.7	
6. Propensity to imitate	10 - 12.1	26 - 40.6	
7. Tendency to group with peers	25 - 30.5	10 - 15.6	
8. A tendency to group up with younger ones.	4 - 4.9	15 - 23.4	
9. Tendency to group with elders	25.6	7 - 10.9	
10. Inclination to an asocial environment	18 - 21.9	6 - 9.4	P> 0.05

Thus, in particular, we have revealed that in the investigated subjects with the asthenodynamic variant, the psychological crisis of maturation was noted practically in all observations and was

pronounced. At the same time in 23% of adolescents of this group a pathologically proceeding pubertal crisis was observed, i.e. the clinical picture was essentially delineated by these disorders. Craving disorders in patients with the astheno-adydynamic variant were of lesser severity and frequency, often manifested as onanism, transient homosexuality and closely correlated with disharmoniously proceeding somato-endocrine metamorphosis.

Nonspecific age-specific forms of reactions were noted somewhat less frequently, at the same time, they differed also in content. Thus, reactions of passive protest, hyper compensation, imitation, and opposition were the most typical for the observed in this group.

Mental intolerance and a feeling of inferiority of teenagers stipulate a pronounced reaction of hyper compensation. Self-affirmations are expressed in unusual forms of cheerfulness and sociability, swagger and bravado. The same compensatory and hyper compensatory mechanisms underlie imitation reactions.

Emancipation reactions are expressed to a lesser degree. The adolescents observed retain attachment to close friends and relatives. Subordinates were intolerant of trusteeship on the part of adults. Grouping reactions with peers and with seniors also receive fewer expressions than in Group I (31.1% of Group I and 16% of Group II). Peers often frighten adolescents in the observed group with rudeness, cruelty, and swagger.

While analyzing the research material, it is necessary to emphasize the absence of propensity for substance abuse, alcoholism and delinquency in the subjects with the astheno-adydynamic variant of the pseudo-neurosthenic state. The false idea of the latter may arise from information about school abandonment, vagrancy which are caused, first of all, by the intolerable situation for our subjects (a difficult environment, ridicule, insults, rudeness, injustice, attitudes on the part of adults, teachers). At the same time, it should be noted that in this group, too, the presence of these symptoms was one of the causes of maladaptation, and we cannot but emphasize such an important feature as a total violation of adaptation during the negative phase of puberty in more than half of the observations.

Analyzing the clinical manifestations of those observed with the astheno-adydynamic syndrome, it should be noted that there was a pattern that manifested itself in the fact that the movement of traits associated

with organic stigmatization, with age went downward, and the formation of personality pathology - first upward, and then horizontally<sup>13</sup>. Thus, in our material, the period of the negative phase in adolescents in the observed group was characterized by a mosaic of personality disorders, but quantitatively less pronounced. The sensitized type of personal manifestations (50%), psychasthenic (23%), labile-sensitized (26%) were characteristic for teenagers in this group. As the analysis of clinical symptomatology has shown, the expressed mosaicism gradually gave way to an inhibited type of personality disorders. As a result, by the end of the pubertal period in the predominant majority of observations, the researched could concentrate the formed structure of personality according to the inhibitory type.

The catamnesis observations made it possible to state both favorable and unfavorable outcomes. It is necessary to note, that in researched under influence of unfavorable biological and social factors, namely heavy infectious diseases, long lasting somatogenias, wrong upbringing by type of hyper protection or homelessness, formation of psychopath-like syndrome with the subsequent clinical end of personality disorder, self-destructive behavior, mood disorder, with neurotic and somatoform disorders was observed.

Of the study population, 96 patients suffered from obsessive-compulsive disorder (OCD). According to the ICD-10 classification, the following features characterize OCD (F42):

- obsessive thoughts are regarded as a product of their own psyche;
- "Ego-dystonic" (unwanted thoughts cause significant distress)<sup>15</sup>;
- there is criticism of obsessions.

As for the obsessions themselves, it is true for them

- The nature of obsessions is intrusive (outside the volitional sphere).
- The thought of committing a compulsive act is not pleasant in itself (simply relieving tension or anxiety is not considered pleasant in this sense).

The basic task of this work was to determine the clinical typology of OCD (Table 3).

Analysis of principal components and multivariate regressions made it possible to identify and describe bundles of individual clinical parameters that are specific for each type of OCD. Based on the results of the study, according to the Y-BOCS scale, 14 principal factors were identified from the entire list of symptoms and their scores for each patient. The Quartimax procedure, as a methodological basis for the

**Table 3:** Factor loads of the Quartimax-rotation of the Y-BOCS scale data for determining the OCD components in the studied patients

Symptoms	Factor loads/types of OCD n = 165			
	Component 1 (T-incomplete)	Component 2 (T-avoidance)	Component 3 (T-ambivalence)	Component 4 (T-accumulation)
Symmetry and order obsessions	<b>0.643</b>	0.327	0.186	0.320
Pollution obsessions	0.148	<b>0.732</b>	0.050	-0.203
Aggressive thoughts	0.022	0.268	<b>0.757</b>	0.034
Hypochondriacal obsessions	-0.379	<b>0.535</b>	0.016	0.257
Sexual obsessions	0.190	0.076	<b>0.706</b>	-0.210
Obsessions of religious content	-0.053	<b>0.653</b>	0.130	-0.378
Dysmorphophobic obsessions	-0.013	0.048	<b>0.786</b>	-0.068
Other obsessions	0.044	-0.012	0.085	<b>0.814</b>
Compulsions of symmetry and order	<b>0.793</b>	0.202	0.078	-0.034
Repetition compulsions	<b>0.748</b>	0.353	0.108	0.131
Purification Compulsions	0.264	<b>0.581</b>	-0.347	-0.335
Compulsive checks	0.192	<b>0.761</b>	-0.008	0.205
Compulsive neurotic excoriations	0.080	-0.006	<b>0.640</b>	0.090
Compulsive picking and collecting	0.099	0.210	-0.137	<b>0.792</b>

analysis, evaluating the weight of individual symptoms in the formation of factor loadings, allowed us to clearly divide the factors into sets of specific symptoms with high correlations for each of the four identified components (sets of specific factors), each of which can be interpreted as a separate type of OCD.

Because we studied two groups of patients: those with OCD and those with schizotypal disorder with dominant obsessive-compulsive symptoms (SCD with OCS), we performed a factor analysis within each group in order to identify the specific distribution of factors (components) and weights of individual symptoms for each group.

For patients with OCD of group F42, the first three components or types of OCS were significant: T-incompleteness, T-avoidance, and T-ambivalence. For T-incompleteness, symptoms of sympathy and order compulsions ( $r=0.895$ ), repetition rituals ( $r=0.637$ ), and symmetry and order obsessions ( $r=0.526$ ) had the highest weight. T-avoidance showed the strongest association with the following symptoms (in rank order): compulsive checks ( $r=0.802$ ), pollution obsessions ( $r=0.781$ ), religious content obsessions ( $r=0.646$ ), hypochondriacal content obsessions ( $r=0.589$ ), and purification compulsions ( $r=0.511$ ). T-ambivalence was characterized by a strong correlation with the presence of sexual content obsessions ( $r=0.814$ ), with dysmorphic content obsessions ( $r=0.813$ ) and aggressive thoughts ( $r=0.686$ ). Somewhat less significant for this group, although also significant, were symptoms of compulsive neurotic excoriations ( $r=0.532$ ). An important result was that the correlation of symptoms with component 4, namely T-accumulation, was completely uncharacteristic for patients in the group F42. Thus, it was proved that this type is uncharacteristic for patients with OCD.

Thus, the diagnostic stage of the study provides an opportunity to develop a differentiated program of complex treatment taking into account clinical typology of the obsessive-compulsive symptom complex, its nosological belonging in the register of psychopathological disorders.

## DISCUSSION

The study clarifies the features of the functional state of the cerebral cortex in children with different symptomatology of borderline mental disorders arising on a residual-organic background. In general, the results of the study agree with the previously known facts<sup>16-18</sup> but clarify some details. Because we studied two groups of patients: with OCD and with schizotypal disorder with dominant obsessive-compulsive symptomatology (SCD with OCS), we carried out factor analysis in each group in order to reveal specificity of distribution of factors (components) and weights of separate symptoms for each group.

Such an approach can be further applied to studies of both the features of cognitive processes and the emotional sphere in order to identify and clarify the physiological mechanisms of the emergence of mental disorders in children and adults.

## CONCLUSION

**Neurosis-like neurasthenic states of residual-organic genesis are characterized by various forms of deviant behavior, characterized by significant polymorphism<sup>19</sup>. Typology of behavioral disorders is defined by clinical variant of a cerebrastrhenic syndrome. In this work, the object of the study was the astheno-adyamic variant<sup>20,21</sup>. It was established that for those studied with the asthenodynamic variant, unfavorable dynamics manifested itself in the consolidation of pathological forms of behavior with subsequent formation of personality disorders.**

**The formation of behavioral disorders correlates with cerebrastrhenic decompensation, altered brain reactivity, repeated harms of a biological nature, unfavorable microsocial conditions, pathologically preceding pubertal crisis<sup>22,23</sup>. Detects a dependence on the predominant value of any of the factors or their combination. The revealed pathogenetic regularities of formation of behavioral disorders expand diagnostic possibilities and promote timely and adequate medical and social rehabilitation<sup>24,25</sup>.**

**The study of clinical manifestations in the studied patients (according to the Y-BOCS scale) allowed to substantiate evidently the selection of four clinical types of OCD: incompleteness, avoidance, ambivalence, accumulation. For patients with OCD (group F42) T-incompleteness, T-avoidance and T-ambivalence proved to be specific.**

**Practical significance of the research lies in the study of the typology of the obsessive-compulsive symptom complex, which makes it possible to develop a program of complex treatment, which significantly improves the quality of life of the given study contingent.**

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**Competing Interest:** None.

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