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CLINICAL AND SOCIO-STRESS RISK FACTORS FOR SUICIDAL BEHAVIOR IN PATIENTS WITH SCHIZOPHRENIA

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Risk factors of suicidal behavior in patients with schizophrenia have been established through the research. Acute and prolonged stressful situations in pre-suicidal period have patho-plastic and patho-kinetic effect on the clinic and course of mental disorders, significantly increasing the risk of suicidal behavior. The impact of psycho-traumatic situations on the formation of motivation of suicidal behavior in acute psychotic states progressively reduces.

Keywords: schizophrenia, suicidal behavior, risk factors, psychic trauma.

Psychic trauma is a complex, multi-component factor having a significant influence on the motives of suicidal behavior. Many authors indicate [1, 2] that psychic trauma increases suicidality indirectly, through the development of mental disorders. Clinical syndromology and dynamics of mental disorders is determined by the initial state of psyche and can be generalized (multi-morbid), combined (co-morbid) and localized (mono- morbid) [3].

Combination of mental disorders related to the stress and psychopathology of a different genesis is a methodologically complex problem. Ongoing researches in this field in overseas countries are somewhat formalized. So, U. Wunderlich and co-authors [4] in 1998 conducted clinical and psychological interviews on the subject of psychiatric co-morbidity in subjects with para-suicide. 91% of suiciders had at least one psychic disorder by DSM-IV, 79% detected signs of co-morbidity and multi-morbidity of psychic pathology, 45% had four or more diagnoses. The authors found that for persons with 3 diagnoses and an undertaken suicide attempt, the suicidal risk was 18 times higher than that for subjects without the diagnosis.

In domestic psychiatry it is traditionally accepted to single out primary diagnosis and accompanying ones, syndromically included in the core. "Psychiatric co-morbidity", investigated by overseas authors, only ascertains existence of some psychic disorders, bypassing the question of their causal correlations, that, undoubtedly, is convenient for commonly used overseas questionnaire survey forms, but with it all, the causal aspect of diagnostics is significantly misrepresented, and makes it difficult to establish etiopathogenic mechanisms of mental pathology development.

Thus, the impact of stressful factors on clinical features of formation of suicidal behavior in patients with chronic mental disorders, particularly schizophrenia, remains insufficiently studied, that determines the relevance of the present study.

The purpose of the study is to investigate of the influence of clinical and stressful factors on the risk of formation of suicidal behavior in patients with schizophrenia.

The object of the study: 320 patients suffering from schizophrenia who had been hospitalized in a psychiatric institution in connection with various forms of suicidal behavior. The presence of acute and prolonged stressful situations in pre-suicidal period was identified in 153 patients (47, 8%). Many of the surveyed patients (62, 4%) had been previously hospitalized, most of them (89.5 %) were registered at the dispensary. The remaining patients (37, 6%) were hospitalized for the first time. Women (54%) outnumbered in the age group 41-50 among 320 schizophrenic patients hospitalized with various forms of suicidal behavior. Patients were hospitalized after a suicide attempt (41.1%), and in pre-suicidal period with various degrees of intensity of antivital experiences (40.5%), in some cases, suicidal behavior was manifested only in the form of threats of suicide (18.4 %). Among methods of implementation of suicidal intentions poisoning (38.5%) prevailed toxic substances that

were used for poisoning included acetic acid, household poisons, and psychotropic medications prescribed to patients for maintenance treatment.

As the main research methods were used: clinical-psychopathology, clinical-dynamic, experimental-psychological, mathematical statistics.

Most researches in the field of suicidology argue that mental illness is one of the leading factors of suicide risk. T. B. Dmitrieva and B. S. Polozhii in their well-known work "Ethnocultural psychiatry" [5] indicate that the prevalence of suicide among mental patients in different countries and ethnic groups is varied. In confirmation of this, the authors present data from a number of overseas studies. Thus, the frequency of suicide among female patients in Japan is 167.3 per 100 000 and 116.7 - male; in Germany - 195 per 100 000 patients of both sexes; in the US state of Oregon among the perpetrators of the offence and admitted ill, the prevalence of suicide was 820 per 100 000, the psychic patients in the same state hospitalized in ordinary psychiatric institutions were 289 per 100 000.

Suicidal behavior in the clinic of mental disorders has always been a subject of special attention of domestic and foreign researchers. These researches have mainly focused on the study of purely clinical aspects of suicidal phenomena in various forms of mental disorders, predictors of suicidal acts were studied, methods of diagnosis were developed, prevention and correction of suicidal forms of behaviors were improved.

A.G.Ambrumova and V.A.Tihonenko [6] to suicidal behavior refer any internal and external forms of mental acts, directed by an idea of depriving oneself of life. Internal forms include suicidal thoughts, concepts, experiences, ideas and intentions.

External forms include suicide attempts and completed suicides. According to the category purpose of suicidal behavior the authors identify true and demonstrative blackmailing variants, as well as self-injury (self-mutilation), the latter, as the authors point out, is not in the least connected with the idea of death. The authors worked out classifications of different types of pre-suicidal and post-suicidal periods. They singled out five types of suicidal-dangerous personality reactions such as: "egocentric switch", "psychogenic pain", "negative interpersonal relations", "negative balance", "mixed and transient responses." These types are understood by the authors as normal personality reactions in extreme situations, at the same time stating that the risk of suicide among psychic patients is 35 times higher than in the general population. The authors identified and described six basic types of personal meanings of suicide: "protest", "revenge", "call", "avoidance", "self-punishment" and «refusal".

In addition to suicidal manifestations, non-suicidal forms of auto-aggression are pointed out too. So, N.V. Aghazadeh [7] identifies the following options auto-aggression: 1) physical auto-aggression at which the main damage is physical, somatic health of the subject; 2) mental auto-aggression, having harmful effects on mental state and health of the person; 3) social auto-aggression, its point of application is the social position of the

individual; 4) ideal or spiritual auto-aggression, the main pernicious effect of which goes to the spiritual sphere of the person. The author from the standpoint of structural and dynamic approach established phenomena of pre- and post-suicidal auto-aggressiveness; he described some options for the auto-aggressive tendencies: steady, progressive, transforming and regressing.

Great attention of the researchers was attracted to different forms of suicidal behavior in the clinic of schizophrenia. Many authors attribute suicide to one of the main causes of death in patients with schizophrenia. According to the American manual of psychiatry by H. I. Kaplan, B. J. Sadock [8], about 50% of patients with schizophrenia over a 20-year period made suicide attempts, of which 10% were completed.

According to various studies, the rates of suicide attempts in patients with schizophrenia vary within wide limits, in particular, it is noted that the diagnosis of schizophrenia among mentally ill who committed attempted suicide, occurs from 10 to 40% of cases. There are indications in the literature that patients with schizophrenia are prone to repeated suicide attempts that are performed most often in the first few months after discharge from the psychiatric hospital. N. L. Farberow [9] in his researches notes that 70% of schizophrenic patients manifest suicidal tendencies, in history there are indications of suicidal attempts in the past.

In recent overseas studies conducted in England, comparative data on suicidal activity of patients with schizophrenia have been analyzed for the periods 1875-1924 and 1994-1998. The results of the analysis showed that despite advances in psychopharmacotherapy, the current level of suicide among patients with schizophrenia, compared with the nineteenth century is 20 times higher.

E. L. Hermann [10] in his study on suicidal trends in the clinic of mental diseases, described peculiarities of suicidal tendencies in schizophrenia depending on the clinical form of the illness and the type of the current process. The author points out that in the paranoid form with depressive inclusions, suicide attempts are set aside from the onset, redive and prepared in advance. In paranoid form without depressive inclusions, attempts are usually committed in the first months of the illness; they are single, occurring suddenly and unexpectedly. In cases where the schizophrenic process takes its course with neurosis-like symptoms and psychopathic-like phenomena, suicide attempts occur reactively, immediately after the psychogenic stimulus, and outwardly they resemble hysterical reactions of psychopaths and alcoholics.

L. A. Marques [11] on the basis of a survey of 100 schizophrenic patients, who had committed suicidal attempts, came to the conclusion that the greatest danger in terms of implementation of suicidal intentions detects patients suffering from shift-like schizophrenia. According to the author, occurrence of suicide attempts in patients with schizophrenia is associated mainly with depressive state, also important are paranoid, hallucinatory-paranoid and paranoid states. The factors contributing to the occurrence of suicide attempts in patients with schizophrenia, the author considered micro-social conflicts (family disputes – 23%), psychogenic experiences associated with the loss of loved ones (11% of cases), different somatogenic disorders (5% of cases) and alcohol intoxication (12%).

Analysis of materials of posthumous forensic psychiatric examination showed that among the mentally ill who had committed suicide, the first place was occupied by patients with schizophrenia. Suicidal acts were committed by schizophrenia patients under the influence of hallucinatory, senestopathic-hypochondriacal, depressive and affective-delusional disorders. In the conclusions the author notes that these syndromes can act as psychopathological mechanisms of suicide both in continuous and remitting forms of schizophrenia.

Direct determination of suicidal acts of productive psychopathological symptoms in schizophrenic patients with leading clinical picture of Kandinsky syndrome has been classically described in the works of M.G.Gulyamov and Yu.V.Bessonova [12]. The authors indicate that in the motivation of suicidal behavior in these patients, the largest share was imperative pseudo-hallucinations, the second place in frequency was taken by pseudo-hallucinations of threatening nature and

closely related in content symptoms of senestopathic automatism; the third place took symptoms of kinesthetic automatism, when suicide attempts were committed under the influence of a sense of mastery. Studies have shown that psychopathological disorders within Kandinsky syndrome can serve as a motive for suicidal actions only in the initial stage of the second phase of paranoid schizophrenia (first two years), and the implementation of suicidal tendencies by the patients becomes possible under certain circumstances, in particular the erroneous acceptance of dissimulation of psychotic disorders for the remission.

In these studies, the authors describe a complex structure of psychopathological conditions characterized by Kandinsky syndrome, against which among predictors of suicidal behavior, they only indicate pseudo-hallucinatory disorders and some forms of mental automatism, without taking into account a possibility of delusional motivations of suicidal behavior. Practice shows that it is delusional desire to get rid of the painful effects and insuperable persecution often forms suicidal motives in patients with Kandinsky syndrome.

A great contribution to the development of the doctrine of delusional disorders in schizophrenia, determining a significant suicide risk of these patients, has been made by Kazakhstan scientists. They described and systematized delusions and mood disorders in later life (R.G. Ilesheva, 1981), affective and paranoid syndromes (N.T. Izmailova, 1984) at different clinical variants and types of schizophrenia [13-14]. J.A. Alimhanov conducted an in-depth comprehensive study of all options of delusional syndromes at paranoid schizophrenia, in which he showed not only a variety of delusional disorders on their content, but also revealed patterns of their formation and transformation within an endogenous process [15].

Subsequent work is more focused on the study of non-psychotic motives of suicidal behavior of patients with schizophrenia. In particular, psychogenic reactions in patients with slow progredient schizophrenia were described, their neurotic, affective and delusional forms were highlighted. It was found that with patients suffering from slow progredient schizophrenia, the presence of "procedural information" was traced. During the survey, not only suicides motivated by "psychotic symptoms", but also "non-psychotic suicides", were identified as well as "mixed forms." Studies have shown that suicidal behavior in patients with schizophrenia is observed more often at relief measure of painful disorders: on leaving the psychosis, in remission or unexpressed initial periods of the illness.

An interesting typology of suicidal tendencies in schizophrenic patients was developed by P.M. Popov [16]. On the statics of suicidal manifestations the author highlighted mild, moderate and severe degrees. According to the dynamics of formation of suicidal manifestations the author divided them into acute (impulsive), sub-acute (compulsive) and gradual (chronic) options. Transient, persistent and recurrent types of suicidal symptoms were described. Undoubtedly valuable in this work is the conclusion that preventive measures for the prevention of suicidal behavior with schizophrenia should be based on a study of "pathogenic mechanisms" of their formation, which the author formalized into three groups: psychogenic, autochthonous and mixed.

M.B. Danilova et al [17] developed clinical diagnostic criteria for suicidal risk in schizophrenic patients. The authors concluded that personal reactions of these patients reflect the attitude either to the content of psychotic disorders, or to actual circumstances which can have subjective insoluble contradictions. External and internal suicidogenic conflicts in any case are of subjective character of reality and intolerance. These studies emphasize that in schizophrenic patients suicide risk is the highest in the initial period, and suicide is often a manifest of the process, the first manifestation of mental illness.

A number of papers by overseas researchers were devoted to the study of suicidal behavior of schizophrenic patients with depressive disorders. Thus, S.P. Roose et al. [18] analyzed 39 cases of completed suicides in patients with this form of mental pathology. It was found that patients with depressive paranoid disorders, 5 times more attempted suicide than patients with depression not accompanied by delirium. Results of this study

were confirmed by M. Wolfersdorf et al. [19], which proved that the risk of suicide in patients with depressive-delusional disorders is much higher than in patients with depressive symptoms only. From our point of view, the data obtained in the above studies are understandable by wider range of mechanisms of formation of motivation of suicidal tendencies in the complex structure of the syndrome in comparison with the simple symptom. In case of depressive-delusional disorders, motivation for suicidal behavior can include the presence of affective and delusional mechanisms, while in case of simple depression only affective mechanisms participate.

Many authors in their studies indicate an increase in suicidal risk after discharge of the patient from the psychiatric hospital, which in some cases is connected with the development of so-called "post-psychotic" (ICD-10 - "post-schizophrenic") depression. S.G. Siris et al. [20], observing patients with schizophrenia, 25% of the observed were noted for clinical post-psychotic depression, such symptoms as "negative self-esteem," "guilt," "loss of interest" were described in its structure which confirms fatal suicidal tendencies of these conditions. Nosological heterogeneity of this group is admitted: including depression, caused by major endogenous process, and neuroleptic depression, and psychogenic depressive reactions at the awareness of severity of the illness which appeared during remission.

In the literature there are data on the increased suicidal risk of patients with schizophrenia, complicated by substance use. In particular, A. A. Dvinsky [21] reported that in patients with schizophrenia combined with alcoholism, suicidal actions are identified in 1.6 times more often than in comparable patients. A. V. Khudyakov [22] points out that alcohol intoxication dramatically increases the risk of fatal outcome in suicidal poisonings with medicines.

In recent years interest has grown in the so-called "non-accidental self-harm" by patients with schizophrenia that are not connected with the desire to be deprived of life, i.e. they are not suicidal in nature, but can often pose a real threat to the life of the patient. I.I. Sergeev, S.D. Levina [23] concluded that with schizophrenic patients, non-casual self-inflicted injuries, as a rule, are secondary, being a consequence of defining the illness as productive (hallucinatory-paranoid, catatonic) or non-psychotic (psychopathic-like, obsessive-compulsive) symptoms. Research in this direction can extend theoretical aspects of the auto-aggressive behavior of the mentally ill, beyond the most commonly reported forms of suicidal self-aggression.

Studying motivation of suicidal behavior in patients with schizophrenia, V.S. Efremov [24] noted that heterogeneity of clinical symptoms as acute attacks of the illness and remission which is observed in these disorders, influence of numerous additional factors (ethno-cultural, personal, situational, etc.) on the formation of suicidal phenomena determine the complexity of the analysis of suicide.

The conducted complex clinical-psychopathological and clinical psychological study of 320 schizophrenic patients with different syndromes (from neurosis-like to hallucinatory-paranoid) allowed singling out typological variants of formation of suicidal behavior: "realistic", "autistic -rationalistic", "psychotic" with arbitrary implementation of suicidal tendencies and "psychotic" with implementation of involuntary suicidal tendencies. In the first type of suicidal behavior, there are a variety of unfavorable situational impacts, causing a short personal response and is accompanied by an attempted suicide. However, they were not associated with exacerbation of the disease process, and suicidal decision was made arbitrarily by patients, although there were separate depressive disorders. In the second variant of behavior, "autistic-rationalist", in an increasingly autization of patients with a separation from the real world and pessimistic revaluation of it, suicidal behavior was formed independent of stressful factors and at the same time having no direct connection with the development of psychosis. The third type of suicidal behavior, «psychotic with an arbitrary implementation of suicidal tendencies», was associated with affective and paranoid attitude towards others and self in the background of various psychopathological disorders (paranoid, depressive- paranoid, oneiroid). Suicides were committed quite arbitrarily, although their motives were due to the content of psychosis. The fourth type of auto-aggressive behavior, «psychotic with involuntary implementation of suicidal tendencies», was formed in the conditions of psychotic alienation of mental and motor-volitional processes that were determined by the presence of imperative verbal hallucinations of suicidal content, ideational and kinesthetic psychic automatism.

The analysis obtained in the study allowed determining that personality significant stressful factors in pre-suicidal period occurred with almost half of the patients (47.8%), which are presented in Table 1. Moreover, 30% of the patients reported two or more simultaneously occurring psycho-traumatic moments: loneliness, coupled with difficult financial situations or conflicting relationships with relatives and the lack of own living space, etc.

Table 1- Social-stressful factors identified in pre-suicidal period in patients with psychic disorders

Social-stressful factors	Number of patients	% (N = 153)
Loneliness (with a sense of rejection)	48	31.3
Difficult financial situation	45	29.3
Adverse housing conditions	20	13.3
Conflicting relations in the family (adultery, spurned love)	24	15.8
Conflicting relations at work, school	16	10.02
Conflicting relations with the relatives (parents, children, and others.)	56	36.7

The data indicated in Table 1 show that the most important thing in the formation of suicidal behavior in patients with schizophrenia are conflicting relationships with relatives, a sense of loneliness and rejection, difficult financial situation, moreover, in 56 patients (36,7%) a combination of 2 or more psycho-traumatic factors were revealed.

The study of clinical features in pre-suicidal conditions showed that clinical manifestation and the course of mental disorders were influenced by certain social-stressful factors, as well as personality significant acute and prolonged psycho-traumatic situations.

Mechanisms of influence of stressogenic factors on the mental activity of man are best reflected, from our point of view, in the classification of B.S. Polozhii [25], In accordance with this

classification, the main options include etiological, de-compensating, patho-plastic and patho-kinetic variants.

According to the present research materials, clinical-dynamic features of relationship of psychic trauma and psychopathological disorders in pre-suicidal period in schizophrenic patients were represented in 2 versions:

1. Psycho-traumatic factors, *reflected* in the structure, nature and content of psychopathological experiences and exerting certain influence on the clinical picture of an underlying mental disorder (patho-plastic mechanism)-32%

These are patients with schizophrenia whose clinical picture of psychotic conditions reveal anxiety and depressive disorders connected with objectively traumatic situation taking place. Despite the fact that the main motives of suicidal behavior in these patients are directly linked to the sharpness and the

content of psychotic disorders, psycho-traumatic factors, increasing depressive and anxiety components of painful experiences, significantly raise the risk of implementation of suicidal intentions

2. Psycho-traumatic factors that have an adverse effect on the course of the underlying psychic disorder (patho-kinetic mechanism)-68%. In patients with schizophrenia it is manifested in worsening of psychopathological symptoms, reducing quality and duration of remission, increasing progredience of the illness. The psycho-traumatic situations exacerbate social and psychological maladjustment of these patients, increase isolation from the society that promotes deepening of the emotional-volitional disorders. From the standpoint of present-day suicidology, factor of social isolation in mental injury is an essential precondition for the subsequent suicidality.

In some cases there may be a combination of two or more of the above mechanisms. For example, psychic injury, causing worsening of the underlying psychic illness (patho-kinetic mechanism), was reflected in the structure and content of psychotic experiences (patho-plastic mechanism), and in future can adversely affect its course and prognosis (patho-kinetic

mechanism), while the frequency of episodes of suicidal behavior, as a rule, considerably increased.

The conducted research has shown that one-time episodes of suicidal behavior statistically authentic more often (67.1%; $P < 0.01$) were observed in those cases when in pre-suicidal period no stressful situations could be identified; and multiple episodes of suicidal behavior statistically authentic (28%; $P < 0.01$) were observed more frequently in patients with the presence of acute and prolonged stressful situations in pre-suicidal period.

The degree of influence of stressful factors on the formation of suicidal behavior at various psychopathological states was ambiguous. The research found that in psychotic states external traumatic factors were less likely to have an impact on the motivation of suicidal behavior than in the absence of productive psychosymptomatiks, when the clinical picture of the illness was limited to the negative disorders with psychogenic reactions. Moreover, there is an inverse correlation between sharpness and depth of the psychotic condition and by the influence of psychotrauma indirectly through the personality structures on motivation of suicidal behavior. This is presented in Table 2.

Table 2- Frequency of occurrence of psycho-traumatic situations at different syndromal structures in pre-suicidal period.

Psychopathological syndrome (n=320)	Number of patients with traumatic situations (n =153)	%
Negative psychopathological syndromes (n=68)	63	92.7
Paranoial syndrome (n=3)	2	66.7
Depression with delusions and hallucinations (n = 108)	53	49.1
Kandinsky-Clerambault syndrome (delusional version) (n = 28)	8	28.6
Kandinsky-Clerambault syndrome (hallucinatory version) (n = 95)	24	25.3
Paraphrenic syndrome (n = 18)	3	16.7

Table 2 data show that, as the syndromal structure of psychopathological condition becomes complicated and increases its sharpness in pre-suicidal period, the probability of impact of stressful situations on the motivation of suicidal behavior is reduced progressively. Psycho-traumatic situations have the greatest impact in the absence of productive psychopathological symptoms, when the clinical picture of mental disorders in pre-suicidal period is limited to negative disorders (92.7% - psychopathic-like personality changes,

reduction of energy potential, etc.). Frequency of occurrence of stressful situations in pre-suicidal period decreases with increasing complication of the clinical picture of mental disorders from simple delusional syndromes (paranoial - 66.7%) to complex syndromal states (depression with delusions and hallucinations of 49.1%, Kandinsky-Clerambault syndrome (delusional version)-28.6%), Kandinsky-Clerambault syndrome (hallucinatory version) -25.3%., The differences are statistically authentic, $p < 0.05$ (Figure 1).

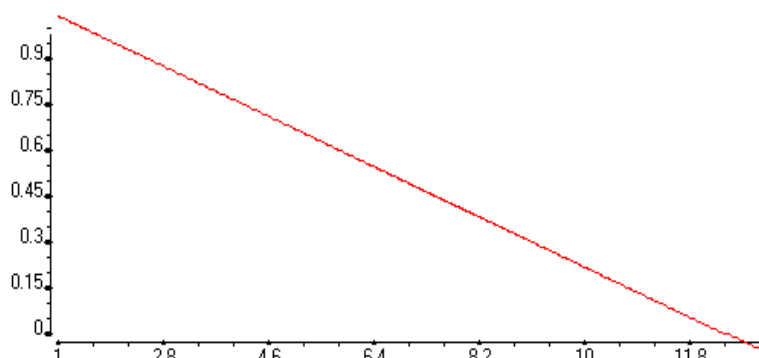


Figure 1-Line of regression of the frequency of detection of stressful situations with an increase of sharpness and depth of psychopathological disorders in pre-suicidal period in schizophrenic patients with suicidal behavior

In Figure 1 the horizontal axis presents the coefficients obtained by ranking syndromal states with an increase of severity and depth of mental disorders (k is Spearman coefficient) in accordance with the data given in Table 2. The vertical axis shows the frequency distribution of the detection of traumatic situations in pre-suicidal period in some options of syndromal patterns of pre-suicidal states. Thus, this graph demonstrates statistical reliability of the regression of the degree of traumatic situations impact on suicidal behavior with an increase in the severity and depth of psychopathological disorders. It is understandable that the impact of stressful situations on the formation of motivation of suicidal behavior can only occur

indirectly through the intact and pathologically changed personality structures. In acute psychotic states with the deepening of mental disorders, the possible influence of personality on awareness and arbitrary decision-making and committing acts progressively reduced, the influence of psycho-traumatic situations on the formation of motivation of suicidal behavior also falls sharply.

The conducted research has led to the following conclusions:

1. Acute and prolonged stressful situations in patients with schizophrenia in pre-suicidal period were found in 47% of the patients. The most important thing in the formation of suicidal behavior was conflicting relationships with relatives,

with a sense of loneliness and rejection, and difficult financial situation.

2. The presence of mental trauma in pre-suicidal period in patients with schizophrenia has patho-plastic (32%) and patho-kinetic (68%) influence on the clinic and the course of mental disorders, significantly increasing the risk of suicidal behavior.
3. The degree of influence of stressful factors on the formation of suicidal behavior in different psychopathological states in schizophrenic patients is different and it depends on the severity and depth of psychopathological disorders.
4. The impact of psycho-traumatic situations on the formation of motivation of suicidal behavior can only occur indirectly through the intact and pathologically changed structure of the personality. As the syndromal structure of psychopathological condition becomes complicated and

increases its sharpness in pre-suicidal period, the probability of impact of stressful situations on the motivation of suicidal behavior is reduced progressively.

- 4.1 The greatest impact of stressful situations have in the absence of productive symptoms, when the clinical picture of mental disorders in the pre-suicidal period is limited to negative disorders (92.7% -psychopathic-like personality changes, reduction of energy potential, and others).
- 4.2 With complication of the clinical picture of metal disorders from simple delusional syndromes (paranoial – 66.7%) to complex syndromal conditions (depression with delusions and hallucinations – 49.1%, Kandinsky-Clerambault syndrome (delusional version)-28.6%), Kandinsky-Clerambault syndrome (hallucinatory version) -25.3%, the frequency of detection of stressful situations in pre-suicidal period decreases.

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