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Influence of Genetic and Environmental Factors on Persecutory Delusions: a Comprehensive Investigation

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Keywords

Mental disorders; paranoid disorders; personality disorders; psychiatry; behavior therapy

Abstract

Aim: The purpose of this study is to investigate the environmental and psychological factors influencing the manifestation of persecutory delusions, particularly within the context of personality disorders. **Subjects and Methods:** A clinical-psychopathic method was employed, supported by psychometric, psychodiagnostic, and clinical-statistical tools. Data were collected through a comprehensive empirical study that assessed the patient's cognitive abilities, intelligence, and personality traits. **Results:** The study identified key factors influencing persecutory delusions, including a high level of suicidal risk, limited social interaction in personal and professional spheres, and increased depressive symptoms. Behavioral strategies employed by patients to interact with others were also examined. These factors contribute to the distorted perception of the environment and the development of the disorder. **Conclusion:** The findings highlight the importance of addressing both mental and behavioral disorders in treating persecutory delusions. The study suggests that effective intervention can improve the quality of life for patients and contribute to the successful correction of mental pathologies in psychotherapy and rehabilitation.

Introduction

At the beginning of the 20th century, when psychiatry went beyond the boundaries of psychiatric hospitals, the modern stage of studying the borderline states of mental illnesses and psychotherapeutic forms of assistance to broad segments of the population began. According to the International Classification of Diseases 11th revision (ICD-11), persecutory delusion syndrome is a symptom of three mental disorders: schizophrenia of the paranoid type, delusional disorder, and paranoid personality disorder (PD) [1]. The following scientists studied the peculiarities of the manifestation of persecutory delusions: Kh. Zhyvaho, S. Fedorchuk and associates, O. Napreyenko and associates, M. Craske and associates, M. Zimmerman, J. Casarella [2-7]. O. Syropyatov and associates the main cause of the pathogenesis of persecutory delusions is considered to be a malfunction of the central nervous system [8]. According to them, the process of transmitting excitation and inhibition impulses is disrupted due to the underdevelopment of neurotransmitters. Brain cells are in an ultra-paradoxical phase. In such a phase, the image formed in the imagination does not correspond to reality.

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Delusions and hallucinations are productive psychopathological symptoms that can be eliminated in therapy. However, A. Borozenets and associates prove that signs of persecutory delusions are very difficult to correct or cannot be corrected at all [9]. A peculiar idea about the environment, contrary to the inconsistency with the surrounding reality, acquires the character of a special world-view. Attempts by people close to them to rationalize the falsity of their beliefs lead to isolation, limiting the patient's contacts, which can lead to a complex form of schizophrenia. S. Stavytska and associates call persecutory delusions autistic fantasizing – when it is difficult for patients to explain the nature of their inner experiences [10]. This is due to the fact that the fundamental characteristic of this syndrome is thought disorders. S. Stavytska and associates describe in their works the results of a study in which patients with symptoms of persecutory delusions demonstrate disordered work of abstract thinking, disturbances in the work of logical thinking and rational cognition, which provoke a pathological interpretation of surrounding events. Objects and phenomena of the environment are displayed, their internal connections are distorted and perceived in this way. From the patient's point of view, such conclusions are always logically justified. Persecutory delusion is not systematic in nature, it is inconsistent, fragmentary, fantastic, often accompanied by emotional disorders, fear, confusion, anxiety. When delusional ideas acquire a more coherent system, paranoid occurs, and the inclusion of nonsensical, delusional ideas indicates the development of paraphrenia. Both signs are characteristics of severe forms of schizophrenia.

Paranoid schizophrenia is one of the most common diseases in which persecutory delusions develop. The etymology of schizophrenia, distinguishing only persecutory delusions, is characterized by stable delusional ideas of 1 month or more. During this period, delusions of persecution or its varieties are formed, and at the moment when the patient's legend finds its confirmation in the environment (purely based on his own beliefs), "crystallization of delusions" occurs, a certain delusional system is built, which develops into the next stage. At this stage, delusions of grandeur appear. The inner world of such a person is impoverished, and in order to experience such a disconnection with one's own self, the psyche forms hallucinations in the form of a fantastic world and the special purpose of the individual in it. However, in order to establish a diagnosis of "schizophrenia", it is required to determine the presence of a complete list of clinical symptoms according to the ICD-11 [1]. Determining paranoid personality disorder as a separate psychiatric diagnosis is a primary task of psychiatry, because the indicators of some symptoms cannot be attributed to schizophrenia or any other type of psychopathy. There are transitional states that have been clinically confirmed in a group of schizoids with narcissistic and dissocial types of disorders, on the basis of which the basis of paranoid development and delusions emerges [11]. The difficulty of establishing a diagnosis of paranoid personality disorder lies in the lack of a clear distinction between delusional ideas of other aetiology.

Therefore, the difficulties in identifying delusional symptoms form the relevance of the purpose of this article: to identify the diagnostic minimum for the study of anomalies of personality disorders of people with persecutory delusions, which will serve to specify the diagnosis and speed up high-quality outpatient and therapeutic treatment.

Subjects and Methods

The study employed a range of theoretical and diagnostic research methods. Theoretical methods included analysis, synthesis, concretization, and generalization of scientific literature in psychology, psychiatry, and philosophy. For diagnostic purposes, psychometric methods such as the Positive and Negative Syndrome Scale (PANSS), the suicidal risk scale of the American Association of Suicidology (AAS), and the WHOQOL-SM (World Health Organization Quality of Life, special module) were utilized [2,4,8]. Additionally, psychodiagnostic tools included the method for diagnosing the level of social frustration (L.I. Wasserman, modified by V.V. Boyko) and the individual-typological questionnaire (L.N. Sobchyk) [10]. Psychological observation and psychiatric interviews complemented these methods. Data processing involved clinical and statistical approaches, including descriptive statistics and graphical representation.

An experimental psychological study was conducted with 421 schizophrenic patients, aged 20 to 46 years, whose illness had persisted for at least two years, and who had no central nervous system diseases or chronic physical conditions. From this cohort, 160 patients were selected for further study. The diagnostic phase of the experiment took place over the course of a year, during which 30 indicators of schizophrenia symptoms were evaluated using a 1-7 scale (where 1 represents absence of a symptom and 7 indicates its severity). The PANSS was employed, consisting of three subscales [4]. The suicidal risk scale assessed four modules, with a 5-point rating system to measure suicidal thoughts, behaviors, and attempts [8]. The WHOQOL-SM provided a subjective assessment of the quality of life, addressing emotional well-being, cognitive function, daily task performance, and social interaction, with scores ranging from 57 (low quality of life) to 285 (high quality of life) [2]. Additionally, psychodiagnostic methods helped evaluate social frustration levels and maladjustment, with a score of 9 points indicating individual maladjustment.

As part of the investigation into the genetic and environmental factors contributing to persecutory delusions, the study

explored both hereditary and external influences on patients' conditions. Genetic factors were assessed through a review of family medical histories, identifying any familial patterns of mental disorders. Environmental influences were examined through patients' life histories, including family dynamics, social interactions, and exposure to stressful or traumatic events. By integrating genetic and environmental data, the study sought to identify correlations between these factors and the manifestation of persecutory delusions in the context of schizophrenia and co-occurring mental health disorders.

Results

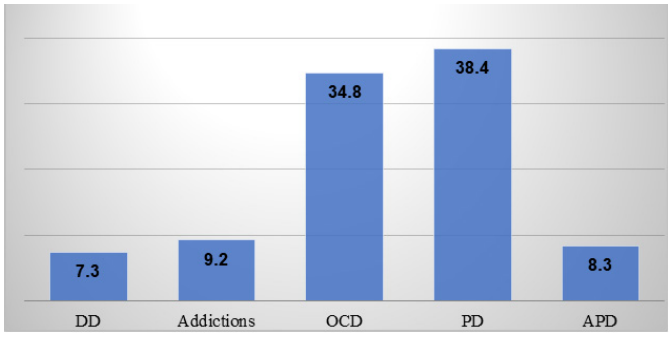
In psychiatric practice, the presence of two independent diagnoses in a patient, which can be distinguished separately from each other, belongs to the category of comorbid diseases. Schizophrenia is sometimes combined with somatic diseases and mental disorders, which greatly complicates the effectiveness of treatment. In this study, 5 comorbidities were identified in the anamnesis of the patients' diseases that form a common symptom complex of schizophrenia or vice versa, become concomitant disorders in schizophrenia. After analysing the control cards of dispensary care for patients with mental disorders, the most common addictive disorders suffered by the patients were determined. The list of non-chemical means includes: tobacco, tea, coffee, alcohol, watching TV shows/series, computer games, food, and Internet abuse. There were rare cases of workaholism, gambling, and oniomania. Among psychoactive substances of chemical origin, opioids, psychostimulants, and sedatives prevailed. The article aims to determine which of the researched disorders has the most pronounced symptoms of persecutory delusions, and whether this syndrome can be separated into paranoid personality disorder. For this, a number of diagnostic techniques were conducted with the respondents, the results of which are given below (Figure 1).

It is known that persons with affective disorders, psychoses and those who abuse psychoactive substances have a fairly high level of suicidal risk. Suicidal thoughts are also characteristic of patients with schizophrenia, however, only patients with persecutory delusion resort to decisive actions. According to the results of diagnosis on the suicidal risk scale of the American Association of Suicidology managed to identify a group of patients with characteristic suicidal symptoms (Figure 2) [8].

Therefore, according to the indicators presented in Figure 2, it can be concluded that the largest number of patients with a high tendency to suicide is a personality disorder. According to 4 modules of the suicidal risk scale of the American Association of Suicidology, patients with this disorder have the highest indicators, especially according to the modules "suicidal behaviour" and "potential danger of suicidal attempts" [8]. Answers in these two scales can be given only by mentally ill patients who have had unsuccessful suicide attempts or typical preparatory measures.

With the help of a special module for patients with endogenous psychoses WHOQOL-SM the level of perception of the quality of life by patients was investigated (Figure 3) [2]. Thanks to this psychometric technique, it was possible to determine the general level of subjective perception of the quality of life and the spheres affecting this indicator. The vast majority of patients have low

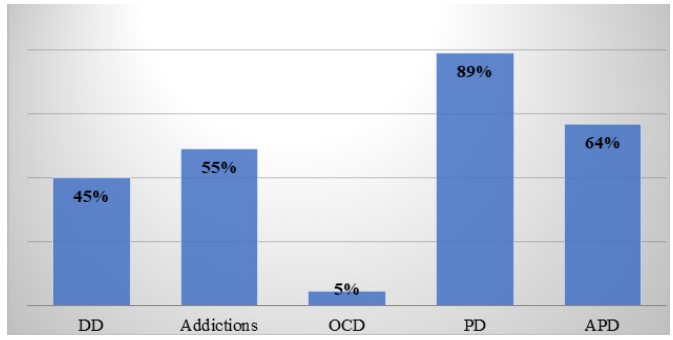
Figure 1. Results of a diagnostic examination using the psychometric method Positive and Negative Syndrome Scale



DD – depressive disorder, OCD – obsessive-compulsive disorder, PD – personality disorder, APD – anxiety-phobic disorder.

Source: the author created the material based on [4].

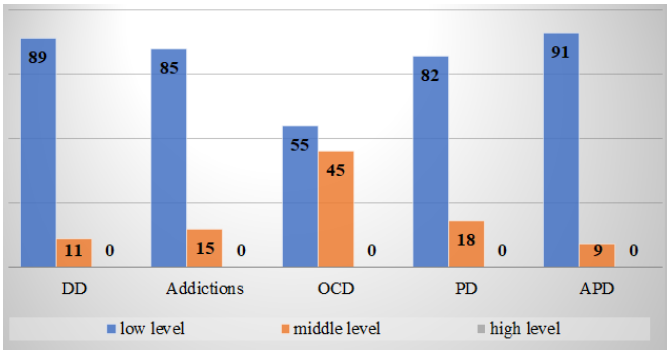
Figure 2. Diagnostic results according to the suicidal risk scale of the American Association of Suicidology



DD – depressive disorder, OCD – obsessive-compulsive disorder, PD – personality disorder, APD – anxiety-phobic disorder.

Source: the author created the material based on [8].

Figure 3. Diagnostic results according to the special module for patients with endogenous psychoses WHOQOL-SM (%)



DD – depressive disorder, OCD – obsessive-compulsive disorder, PD – personality disorder, APD – anxiety-phobic disorder.

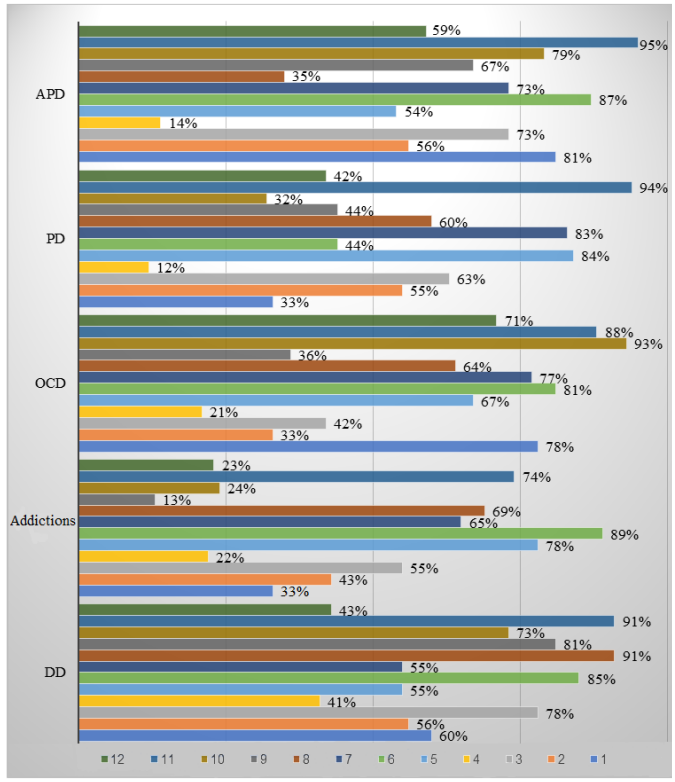
Source: the author created the material based on [2].

indicators in the field of positive and negative emotions, which indicates difficulties in determining their emotional state in schizophrenia. The sphere of own functioning (cognitive capabilities, abilities to perform work and everyday tasks) also has low indicators. The spheres of recreation and entertainment, professional and family status, social interaction and support also have low indicators. High indicators could not be found in any sphere, which indicates the patients' dissatisfaction with the quality of their own lives.

The results shown in Figure 3 confirm the data of the psychodiagnostic examination according to the method of diagnosing the level of social frustration of L.I. Wasserman in the modification of V.V. Boyko (Figure 4) [10]. Therefore, all respondents have an increased level of frustration: patients with a depressive disorder have frustrations in the field of "cognition" and "happy family life"; patients with schizophrenia who have compatible addictions showed a high level of frustration in the field of "material support of life"; patients with comorbid mental disorders in schizophrenia – obsessive-compulsive disorders have a high level of frustration in the areas of "freedom", "having friends", "happy family life"; schizophrenic patients with personality disorder have a high level of frustration in the sphere of "love", "having friends", "happy family life"; in patients with anxiety-phobic disorders, the spheres of "material support of life" and "happy family life" are frustrated. Therefore, it can be concluded that patients are dissatisfied with the quality of their own lives due to the inability to establish relationships with people, which is why they lose the opportunity to create a family, have friends, and improve their financial situation.

The final method, which allowed creating the portrait of a person with a mental disorder of persecutory delusions, is the method of determining the typological features of the personality and leading character traits of L.M. Sobchyk (Figure 5) [10]. With the help of this technique, the author was able to determine the leading trends in the development of the individual in the process of interaction of his "Me" with the social environment. So, according to Figure 5, it can be seen that some comorbid mental disorders in schizophrenia have maladaptive properties: in depressive disorder, these are "introversion" and "anxiety", that is, such patients are prone to isolation and alienation from the environment due to obsessive fears and panic reactions. In patients with addictive behaviour, "extraversion" is a maladaptive property. They have indecipherable social relationships, trying to solve their own problems at the expense

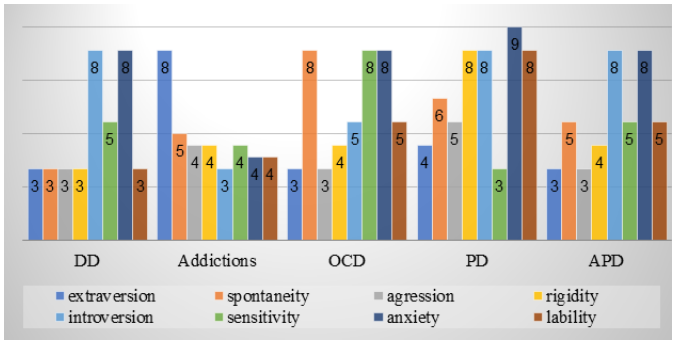
Figure 4. Results diagnosis of the level of social frustration according to the method of L.I. Wasserman in the modification of V.V. Boyko



1 – active life; 2 – health; 3 – interesting work; 4 – beauty of nature and art; 5 – love; 6 – material support of life; 7 – presence of friends; 8 – self-confidence; 9 – cognition; 10 – freedom; 11 – happy family life; 12 – creativity; DD – depressive disorder, OCD – obsessive-compulsive disorder, PD – personality disorder, APD – anxiety-phobic disorder.

Source: the material was compiled by the author based on [10].

Figure 5. Results of the psychodiagnostic examination according to the individual-typological questionnaire L.N. Sobchyk (%)



DD – depressive disorder, OCD – obsessive-compulsive disorder, PD – personality disorder, APD – anxiety-phobic disorder. Source: the material was compiled by the author based on [10].

of other people. In patients with obsessive-compulsive disorder, "spontaneity", "sensitivity" and "anxiety" have maladaptive properties, that is, the neurotic state of such people consists in impulsive actions on which the patient spends all his resources.

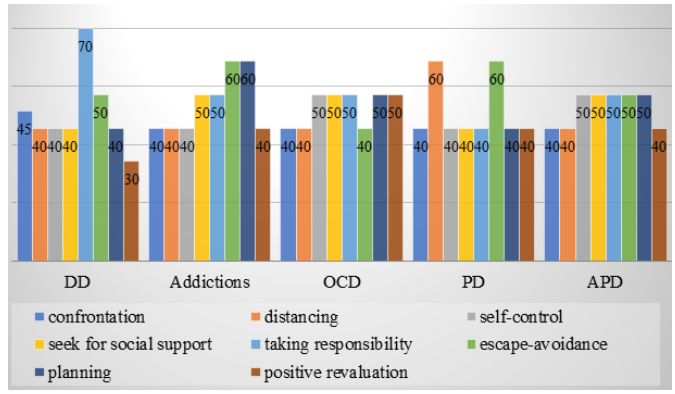
Patients with schizophrenia and personality disorder showed maladaptive properties according to the parameters "rigidity", "introversion", "anxiety" and "lability", that is, obsessive fears in combination with alienation form wariness and suspicion, in addition, the persistence of such people in their beliefs can lead to steroid manifestations. This means that personality disorder is the most widespread comorbid mental disorder in schizophrenia according to individual typological characteristics. Patients with anxiety-phobic disorders showed maladjustment in the properties of "introversion" and "anxiety". From the anamnesis, the patients were determined to have the following list of phobias: agoraphobia, specific isolated phobias, generalized anxiety disorder, and social phobias. These phobias form their individual typological characteristics, which consist of obsessive fears and panic reactions, a tendency to isolation, and alienation from the environment.

Confirming the results obtained during the examination according to the individual-typological questionnaire L.N. Sobchyk patients with comorbid mental disorders in schizophrenia choose a certain way of behaviour in a stressful situation in order to overcome difficulties (Figure 6) [10].

Therefore, 70 % of patients with a comorbid mental disorder in schizophrenia – depressive disorder have coping "taking responsibility". This coping is considered the most ecological way to solve the problem, however, in combination with the maladaptive character trait "anxiety", such people try to solve the problem in order to avoid punishment. Copings "escape-avoidance" and "planning" are characteristic of schizophrenia patients with addictions. This choice of coping is explained by the desire to "escape" from problems by choosing any type of addiction. And from the outside, such patients show a desire to get rid of a bad habit (they turn to a therapist, take medication), however, the negative symptoms of schizophrenia lead to new exacerbations. Only correct treatment of schizophrenia allows the patient to get rid of addictions. Patients with obsessive-compulsive disorder in schizophrenia have several coping strategies, the course of the disease burdened by the symptoms of schizophrenia requires efforts to regulate their feelings and actions, search for emotional support from the outside, solve problems in order to avoid punishment, plan their behaviour in order to control their actions and focusing on a positive assessment of the environment.

Patients with schizophrenia personality disorder choose to distance themselves from a stressful situation by making both behavioural and cognitive efforts. That is, the psyche of such people seeks to displace negative experiences, taking into account the maladaptive properties of the character (Figure 5). Such patients have an individual type of experience, which consists in creating their own world-view, in which the patient shows his own strengths and direction of motivation, style of relationships, and cognitive processes. Patients with anxiety-phobic disorders in schizophrenia, taking into account

Figure 6. The results of a psychological study of the choice of behavioural strategies (%) according to the coping questionnaire Ways of Coping Questionnaire R. S. Lazarus, S. Folkman



DD – depressive disorder, OCD – obsessive-compulsive disorder, PD – personality disorder, APD – anxiety-phobic disorder.

Source: the material was compiled by the author based on [3].

Table 1. Generalized data on the characteristics of the manifestation of persecutory delusions in personality disorder in schizophrenia

Symptom	Features of manifestation
Positive/negative symptoms of schizophrenia	Delirium, disorganization, suspiciousness
Suicidal behaviour	Emotional and social alienation, limitation of contacts, apathy, stereotyped thinking
Subjective perception of the level of quality of one's own life	The quality of one's own life is perceived as low
The level of social frustration	A happy family life, having friends and love are areas in which patients feel frustrated
Individual typological features	Anxiety, introversion, rigidity, and lability are individual and typological characteristics of patients with a personality disorder with schizophrenia
Style of coping strategies	Distancing, escape-avoidance – behavioural strategies in stressful situations

their individual and typological personality characteristics (Figure 5), resort to efforts to regulate their feelings and actions: they are in codependent relationships in order to receive emotional support; arbitrarily focused efforts to solve problems in order to avoid punishments; behavioural efforts aimed at escaping from problems.

Summarizing all of the above, it was possible to identify a comorbid mental disorder in schizophrenia, which, according to its symptoms and features of manifestation in the environment, has the aetiology of persecutory delusions, namely, personality disorder in schizophrenia. In the anamnesis of patients with comorbid personality disorders in schizophrenia, demonstrative and anxiety disorders prevailed; emotionally unstable and anankast – in smaller numbers. According to the symptoms, these disorders were divided into a separate group and a treatment protocol was applied to such patients, according to it the negative symptoms of schizophrenia are reduced. However, during the treatment, which was carried out in a psychiatric clinic in outpatient conditions, the condition of the patients remained unchanged. Table 1 summarizes all the symptoms of personality disorder in schizophrenia, which indicates the features of the manifestation of persecutory delusions.

The study explored both genetic and environmental factors contributing to the manifestation of persecutory delusions in patients with schizophrenia and comorbid mental health disorders. A comprehensive analysis of family medical histories revealed that patients with a history of schizophrenia or other psychiatric disorders in their families exhibited a higher tendency towards developing persecutory delusions. This suggests a hereditary predisposition to these symptoms. Environmental factors, including familial dynamics, social interactions, and exposure to trauma or stress, were also found to play a significant role in the onset of persecutory delusions. Patients with a history of severe interpersonal conflicts or traumatic experiences, particularly in early life, demonstrated a higher frequency of persecutory delusions and other psychotic symptoms.

Genetic analysis indicated that certain familial patterns, such as the presence of schizophrenia, major depressive disorder, or anxiety disorders in close relatives, were more common in patients experiencing persecutory delusions. This finding supports the hypothesis that genetic vulnerability, when coupled with specific environmental stressors, could trigger or exacerbate the development of paranoid symptoms. The relationship between genetic factors and environmental triggers, such as a history of abuse or neglect, was particularly evident in the subgroup of patients with comorbid personality disorders. The findings are summarized in Table 2, which highlights the characteristics of persecutory delusions in patients with a history of schizophrenia and comorbid mental health conditions. This table also includes data on the genetic and environmental factors that correlate with the manifestation of persecutory delusions.

These results indicate that both genetic and environmental factors are crucial in understanding the manifestation of persecutory delusions in patients with schizophrenia. The findings suggest that individuals with a genetic predisposition to schizophrenia or other psychiatric disorders are more likely to develop paranoid symptoms when exposed to stressful life events. This highlights the importance of considering both hereditary vulnerabilities and external environmental influences in the treatment and management of persecutory delusions in clinical settings. The identification of these

Table 2. Characteristics of persecutory delusions and associated genetic and environmental factors in schizophrenia with comorbid personality disorders

Symptom	Features of Manifestation	Genetic Factors	Environmental Factors
Positive/Negative Symptoms of Schizophrenia	Delirium, disorganization, suspiciousness	Family history of schizophrenia or other psychiatric disorders	History of family conflict, trauma, or neglect
Suicidal Behaviour	Emotional and social alienation, limitation of contacts, apathy, stereotyped thinking	Genetic predisposition to mental health disorders	History of significant stress or trauma (e.g., abuse, loss)
Subjective Perception of Quality of Life	Perception of low quality of life	Family history of depressive or anxiety disorders	Social isolation, lack of emotional support
Level of Social Frustration	Frustration in relationships, work, family life	Hereditary anxiety or mood disorders	Early life stress, unstable family environment
Individual-typological Features	Anxiety, introversion, rigidity, and lability	Family history of personality disorders or neurotic traits	History of emotional neglect or high levels of familial conflict
Coping Strategies	Distancing, escape-avoidance – behavioural strategies in stressful situations	Inherited coping mechanisms related to emotional regulation	Exposure to chronic stress, unstable childhood experiences

factors will aid in the development of more targeted interventions and prevention strategies for individuals at risk of developing these severe mental health conditions.

So, in patients with persecutory delusions, such features of manifestation can be identified, which, with a complete symptom complex, can be distinguished as a personal mental disorder. It is noted that against the background of common symptoms that have been diagnosed in patients with other mental disorders in schizophrenia, personality disorder is distinguished by individual-typological features such as rigidity and lability. The level of these properties beyond the norm is manifested in the inertia of judgments, wary suspicion, demonstrativeness, and hysterical manifestations. That is, in the worldview of such a person, the entire environment is perceived as hostile, from which it is necessary to protect. Usually, such patients do not pose a threat to society, because there is no aggressiveness in their symptom complex. Suicide can be committed accidentally (in a state of affect, when it is difficult for the patient to control their emotions) or as a demonstrative act. The latter most often occurs against the background of delusions of persecution, where the patient harms themselves in order to confirm their false beliefs and convince others of the truth of their ideas.

Moreover, the study revealed a significant role of both genetic and environmental factors in the development of persecutory delusions. Family medical histories demonstrated a higher prevalence of schizophrenia and other psychiatric disorders in individuals with paranoid delusions, suggesting a hereditary predisposition to these symptoms. Environmental factors, such as a history of family conflict, trauma, or social isolation, were found to exacerbate the manifestation of persecutory delusions. In particular, patients with comorbid personality disorders often displayed maladaptive personality traits, including anxiety, introversion, rigidity, and emotional instability. These features were found to be more pronounced in individuals with a history of early life stress or interpersonal trauma. Thus, the interplay between genetic vulnerability and environmental stressors significantly contributes to the emergence of persecutory delusions in patients with schizophrenia and personality disorders. This understanding underscores the importance of considering both hereditary and external factors in clinical diagnosis and treatment, as these elements are crucial for developing more effective therapeutic approaches tailored to individual patient needs.

Discussion

It is required to understand that at the basis of persecutory delusion lies psychological violence that occurred in childhood. Such events change the stereotype of thinking in the direction of negative judgments. Therefore, the symptoms of persecutory delusions are affected by both the personal characteristics of a person and the negative effects of the environment. From the research conducted in this article, it can be seen that two types of comorbid mental disorders in schizophrenia: obsessive-compulsive and anxiety-phobic have similar

symptom complexes to personality disorder in schizophrenia, however, in the structure of these disorders, there are no such positive symptoms of schizophrenia as delusions, hallucinations, feelings own greatness, hostility and suspicion, as well as negative symptoms: disorders of abstract thinking. Persecutory delusions are also absent in comorbid psychiatric depressive disorders and various addictions in schizophrenia. Therefore, diagnosing the features of the manifestation of persecutory delusions causes certain difficulties, because in practical and scientific terms there are not enough diagnostic criteria for determining this mental illness. In modern studies of mental disorders of the personality, it was found that about 1 - 2 % of patients have signs of persecutory delusions [12]. Moreover, this indicator is the same both for developed countries and for the Third World countries. In a study by J. Gannon and associates in European countries, 1 patient with persecutory delusions was found out of 1000 respondents, as well as in African and Asian countries [13]. The only difference is that the pathogenesis of the disease in the Third World countries develops faster and manifests itself in acute states of confused consciousness.

The socio-economic factor affects the spread of persecutory delusions among low-income segments of the USA population. The author of this study, N. Kalin explains the high level of stress experienced by people from disadvantaged regions [14]. The incidence of persecutory delusions increases in direct proportion to the number of the city's population. J. Mikulska and associates conducted a study in British cities with a population of over 100000 people and found that cities with crowded streets, public transport and leisure facilities make some individuals want to be secluded [15]. There are scientists who insist on the genetic aetiology of the disease, but the gene itself has not yet been identified [16,17]. However, in the research of this article, it is noted that this personality disorder is acquired and has become a kind of protective mechanism against stressful events, for example, the negative treatment of parents with their children: the absence or insufficient satisfaction of basic needs and psychological violence. In this way, an adult by the age of 20 - 25 develops a basic sense of mistrust of the world, they expect sadistic behaviour from people in the environment, show dependence in relationships or generally avoid them in order to protect themselves. Such assumptions are confirmed in the research of M. Tibber and associates where they consider this disorder as a trust deficit [18]. Because of this, patients tend to exaggerate any barely noticeable actions of the environment and perceive them as hostile and can react intensively to them. These beliefs become part of the patient's awareness of the influence of others on her. O. Napreyenko and associates explained this by the presence of alexithymia, the presence of which in the anamnesis of patients causes disturbances in relationships with people, difficulties in social adaptation and even autism [4].

In his research, Y. Safai also proves that persecutory delusion occurs in combination with other personality disorders [19]. Y. Safai distinguishes 5 types of paranoid personalities with delusional syndrome. "Paranoid-narcissistic" manifests itself as megalomania with underdeveloped social skills. The author explains that these patients, facing an obstacle in an environment that does not recognize the omnipotence of the patient, plunge into their own fantasy world and dream about their own greatness there. "Paranoid-antisocial" perceives the surrounding world as hostile and responds to it with rebellious behaviour, pushing other people away from themselves. "Paranoid-compulsive" – perfectionists, self-critical, behave alienated. Tend to attribute personal shortcomings to others. "Paranoid-passive-aggressive" – irritable, negative, unable to maintain strong relationships (delusions of jealousy), socially isolated. The "decompensated" type of paranoid disorder manifests itself in psychotic episodes as a response to stress, which can later develop into psychosis.

The reason for the formation of these types is explained by Y. Safai in the peculiarities of raising a child, namely, the attitudes transmitted by parents to their children: "You must meet our expectations: be afraid of mistakes, not be different from others " [19]. As a result of such upbringing, a personality is formed, dependent on the opinion of the environment with broken social ties, very often becomes a victim of bullying in the children's team. Spending a lot of time in thought (especially in adolescence), such people develop a sense of loneliness, and the psyche, trying to save the individual from obsessive thoughts, forms an awareness that the cause of bullying lies in its peculiarities and envy of others. Such a defence mechanism is believed to alleviate suffering, however, delusions of grandeur reinforce social isolation and social interactions cause anxiety. Therefore, a person suffering from persecutory delusions has an internal conflict, which is depicted in Figure 4 – spheres of the social environment that cause frustration (not meeting needs). And, therefore, patients want to have a family, friends, a loved one, a favourite job, however, acceptance by others will threaten the patient's system of ideas about the surrounding world, which increases a person's social isolation.

In study, L. Hinojosa-Marqués and associates studied the responses of a patient with persecutory delusions during a psychiatric interview using the method of computer simulation of responses developed by E. Colby in 1981 [20]. This model is based on a set of strategies that patients use to avoid shame and humiliation.

L. Hinojosa-Marqués and associates investigated that the self-esteem of a person with a personality disorder who has persecutory delusions is based on the idea that he is flawed, imperfect, inadequate. When such people find themselves in a humiliating situation for them, there is a protective reaction of the psyche – to shift the blame to others, even if this situation was created by the person with a mental disorder. By taking potentially offensive measures against people it attributes bad deeds to, one can get the same appropriate measures in return. Thus, a person suffering from persecutory delusion disorder personally increases shame and humiliation without realizing it. Feeling anger and anxiety is more acceptable for such people than shame and humiliation. In the study of J. Cosgrave and associates confirms the assumption that the set of symptoms that characterize persecutory delusions is a personality disorder [21]. J. Cosgrave and associates specify that persecutory delusions include thought disorders and found that 2.2 - 4.4 % of USA residents have social anxiety disorder.

Diagnosing persecutory delusions and establishing the causes of development requires professional skill from a psychiatrist. Patients do not often seek treatment on their own and tend to spread their delusional ideas to the doctor. Long-term, systematic delirium makes it difficult for the patient to stay in the team, and therefore the medical staff can be perceived as hostile. Therefore, it is very important that the atmosphere in the medical institution is favourable and does not cause hostility. With competent treatment, the patient can get rid of symptoms or their manifestation will decrease. The complexity of such treatment lies in the responsibility borne by the patient, and when treatment is refused, the mental disorder progresses. The pathogenesis of some cases has an unfavourable prognosis, for example, patients with concomitant organic lesions of the central nervous system, chronic diseases and various types of addiction. A limitation of this study is the small number of subjects, which may affect the generalizability of the findings.

Conclusion

The prevalence of mental disorders among the population is a serious problem that requires an immediate solution. The development of the symptoms of some diseases takes several years, so the separation of persecutory delusions into a separate nosological unit allowed studying this disease in more detail and objectively. The best way to diagnose a personality disorder with persecutory delusions is when the stage of systematic delusions is formed. During this period, the patient associates him with the environment, which worsens relations in the family and at the workplace. Timely combined treatment stabilizes mental activity and reduces the expression of pathological symptoms, which ensures the normalization of social relations. In the absence of appropriate treatment, systematized delirium progresses and sometimes pushes the patient to commit criminal acts against the environment. However, in the research of this article, it is noted that aggressiveness is not a characteristic feature of persons with persecutory delusions. For them, rigidity and lability are more inherent – two opposite signs that form an internal personality conflict: there is a natural desire to build relationships with the surrounding world, however, they will have to get rid of their own illusion about the hostility of the environment. Therefore, patients tend to independently create potentially criminal activities in order to approve their own world-view and convince others of it.

Persecutory delusions are a component of a personality disorder, and in this study, criteria were identified by which the features of this syndrome can be determined: delusions, disorganization, suspiciousness; emotional and social alienation, limitation of contacts, apathy, stereotyped thinking; one's own life is perceived as of low quality; happy family life, having friends and love are areas in which patients feel frustrated; anxiety, introversion, rigidity, and lability – individual and typological characteristics of patients with personality disorder with schizophrenia; distancing, escape-avoidance – behavioural strategies in stressful situations. Therefore, the prospect of further research consists in obtaining reliable data for understanding the essence of personality disorders with persecutory delusions, for this it is necessary to experimentally determine the diagnostic minimum that fully characterizes the features of the manifestation of persecutory delusions.

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Conflict of interest

None to declare.

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