Early trauma, attachment experiences and comorbidities in schizophrenia

Relação entre traumas precoces, experiências de apego e comorbidades na esquizofrenia

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Abstract

Objective: To evaluate attachment patterns in subjects with schizophrenia and their relationships to early traumatic events, psychotic symptoms and comorbidities.

Methods: Twenty patients diagnosed with schizophrenia according to criteria from the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5) underwent retrospective symptom assessment and careful assessment of the number and manner of childhood caregiver changes. The Diagnostic Interview for Psychosis and Affective Disorders (DI-PAD) was used to assess symptoms related to schizophrenia (positive and negative symptoms), depression and mania. Anxiety disorder comorbidities were assessed by the Liebowitz Social Anxiety Scale (LSAS), Yale-Brown Obsessions and Compulsions Scale (Y-BOCS) and Panic and Schizophrenia Interview (PaSI). Experience in Close Relationships – Relationship Structures (ECR-RS) and Early Trauma Inventory Self Report-Short Form (ETISR-SF) were used to assess attachment patterns and traumatic history, respectively.

Results: Moderate and significant correlations between attachment patterns and early trauma showed that greater severity of anxious attachment was predicted by a higher frequency of total early traumas (Spearman $\rho = 0.446$, $p = 0.04$), mainly general traumas ($\rho = 0.526$, $p = 0.017$; including parental illness and separation, as well as natural disaster and serious accidents). Among the correlations between early trauma and comorbid symptoms, panic attacks occurring before the onset of schizophrenia showed significant and positive correlations with ETISR-SF total scores and the sexual trauma subscale.

Conclusion: Children with an unstable early emotional life are more vulnerable to the development of psychopathology, such as panic anxiety symptoms. Traumatic events may also predict later schizophrenia.

Keywords: Schizophrenia, early traumas, attachment, schizoaffective disorder.

Resumo

Objetivos: Avaliar o padrão de apego em portadores de esquizofrenia e discutir a relação que tais padrões apresentam com a sintomatologia psicótica e as comorbidades dos pacientes investigados.

Métodos: Vinte pacientes diagnosticados com esquizofrenia de acordo com os critérios do Manual Diagnóstico e Estatístico de Transtornos Mentais, 5ª edição (DSM-5) foram submetidos a avaliação de sintomas retrospectivos e avaliação cuidadosa do número e modo de mudança de cuidador da infância. A Entrevista Diagnóstica para Psicoses e Transtornos Afetivos (DI-PAD) foi utilizada para avaliar sintomas relacionados à esquizofrenia (sintomas positivos e negativos), depressão e mania. As comorbidades de transtorno de ansiedade foram avaliadas pela Escala de Ansiedade Social de Liebowitz (LSAS), Escala de Sintomas Obsessivo-Compulsivos de Yale-Brown (Y-BOCS) e Entrevista de Pânico e Esquizofrenia (PaSI). Os instrumentos Questionário das Experiências nas Relações Próximas-Estruturas Relacionais (ECR-RS) e Inventário de Autorrelato de Trauma Precoce - Forma Curta (ETISR-SF) foram utilizados para avaliar padrões de apego e histórico traumático, respectivamente.

Resultados: Foram identificadas correlações significativas entre a ocorrência de traumas precoces e o apego do tipo ansioso. Também foi verificada a relação entre traumas gerais e sintomas de pânico, constatando-se que as crises de pânico antecipam surtos quando predominam sintomas ansiosos, somáticos, alucinações e ideias delirantes. Foi observado que a ocorrência de traumas precoces contribui para o pânico, elevando o risco de episódios psicóticos.

Conclusão:. Os resultados indicam que as adversidades ambientais na infância estão associadas com o risco de desenvolvimento de esquizofrenia e de outras psicoses mais tarde na vida.

Descritores: Esquizofrenia, apego, relações vinculares.

Introduction

The singular emphasis on biological etiologies for schizophrenia over the last quarter-century is now giving way to the joint consideration of social and environmental factors and multifactorial models of disease determination.[1] Evidence comes from regional and ethnic variations in disease incidence, as well as from associations with social adversity in childhood and adulthood. Indeed, environmental effects may act through epigenetic alterations of heritable genetic factors. Emerging science suggests that these changes in gene expression from environmental influences on early development can have a lasting impact on physiology and behavior.[2]

Considering this, nature and nurture can now be viewed as biological nature and the biological effects of emotional nurture. Biological vulnerabilities and early relational experiences may work together in influencing the onset and course of some mental disorders. Indeed, advances in genetic research have demonstrated an interaction between genetic factors related to schizophrenia and environmental exposures that increase the risk of triggering the disease.[1]

Early emotionally traumatic experience also influences clinical features of schizophrenia, apparently increasing cognitive impairments and positive symptom severity.[2] Supported by a stress sensitization pathway paradigm,[3] Ruby et al. observed that early trauma (such as prenatal stress, maternal separation, childhood abuse and emotional neglect) predicted more positive and dysthymia symptoms, as well as reduced whole brain volumes and increased amygdala-to-whole brain volume ratios. Among the clinical features in schizophrenia, mood and anxiety symptoms are also influenced by early traumatic experiences, which may determine premorbid symptoms and comorbidities.

Early traumas that result from parental relationships determine different patterns of attachments in adulthood, making someone more anxious and/or avoidant.[4] The emergence of assessment tools and measurement of attachment now allows studies of individuals with psychiatric clinical symptoms that improve their clinical management.[5] From a psychological perspective, early traumas will influence development of attachment patterns and make patients more prone to psychiatric disorders in adulthood, including comorbidities in schizophrenia.

The main goal of this study was to evaluate attachment patterns in subjects with schizophrenia and discuss how these patterns relate to psychotic symptoms and comorbidities. Another objective of this investigation was to draw correlations between early traumas and the onset of psychotic symptoms.

Method

The study recruited 20 subjects diagnosed with schizophrenia according to criteria from the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5). Subjects were evaluated in a psychiatric hospital in Campo Grande, Brazil, during hospitalizations for clinical exacerbations, and were treated by independent hospital-based psychiatrists. Five patients were excluded from the analysis because of unreliable assessment information when comparing medical files and family interview. Clinical files were analyzed and subjects were interviewed along with their relatives or guardians to confirm and complement medical history and assessment materials.

Relative/guardian report and patient report only differed in a few cases, where the patient did not recall the traumatic event but the guardian did. This discordance was pointed out by the guardian during the collection of life history data. In all such cases, the patient and caregiver discussed the discrepancy and the patient had a final say as to whether a given traumatic event should be included in the report.

An experienced mental health professional assessed each patient prior to enrollment; a patient could be in active psychosis, but was excluded if they were too disorganized or unable to collaborate effectively for the study. In the event that a patient did not appear to understand a question, we rephrased and adapted the questionnaire to the patient's cognition and cultural understanding.

Procedures

The study was approved by the local ethics committee. Subjects were first informed about the research by their clinical team. Interested cases were recruited into the study after their schizophrenia diagnosis was obtained by record review. All subjects signed an informed consent form, with additional written authorization obtained from the subjects' relatives.

First, an experienced researcher (A.B.V.) used DSM-5 criteria to confirm the diagnosis of schizophrenia. Then, retrospective symptom assessment started with a broad clinical interview about the subject's history and symptomatic evolution. Special consideration was given in the interview to the manner and number of childhood caregiver changes, indicating the number of times each subject was moved to third-party care, losing contact with the previous caretaker.

Measures

Clinical assessment was followed by the application of the structured interview, scales and inventories. The Diagnostic Interview for Psychosis and Affective Disorders[6] (DI-PAD), an interview based on International

Classification of Diseases (ICD) and DSM algorithms, was used to assess symptoms related to schizophrenia (positive and negative symptoms), depression and mania. Anxiety disorder comorbidities were assessed using the Liebowitz Social Anxiety Scale[7] (LSAS), the Yale-Brown Obsessions and Compulsions Scale[8] (Y-BOCS), and the Panic and Schizophrenia Interview[9] (PaSI).

To evaluate attachment and retrospective trauma occurrence, two instruments were used: Experience in Close Relationships – Relationship Structures[5] (ECR-RS; anxiety and avoidant attachment pattern) and Early Trauma Inventory Self Report-Short Form[10] (ETISR-SF; trauma history).

The ETISR-SF assesses early traumas according to the following categories: general trauma, physical, sexual and emotional abuses. Respondents may answer yes or no to each of the 27 items evaluated. This scale has been translated into the Portuguese language and adapted to the Brazilian context, and evaluated for validity and reliability, presenting adequate indicators.[11]

Anxious attachment is characterized by sensitivity to abandonment, reflecting the extent to which the subject is concerned with the availability of another person for any needed support. Avoidant attachment is characterized by discomfort with intimacy and closeness in relationships resulting from feelings like fear of embarrassment and rejection sensitivity. Its severity reflects the degree to which the individual is concerned about the intentions of their partners, and thus strives to keep some emotional distance and independence.

Insecure attachment styles such as anxiety and avoidance have also been shown to correlate with measures of psychiatric symptoms[12,13]: anxious may resemble panic anxiety, avoidant may resemble social anxiety or atypical depression, and both may be related to the developmental process of these disorders.[14] However,

the central aspect of the attachment questionnaire is to investigate relational and intrapersonal feelings, with different aspects of close relationship quality. The scale consists of nine items, the first six measuring anxiety and the last three the avoidance of attachment in close relationships with parents, colleagues, partners and friends. In each relational domain, the same nine items are applied and assessed using a seven-point Likert scale, where 1 means strongly disagree and 7 means strongly agree. The total score of the scale is the mean of the items and may range from 1 to 7, with higher scores indicating greater attachment avoidance or anxiety.

Due to the length of the overall assessment, the interview was divided into two phases, with an interval of 2-4 days between the two. Considering the diagnosis and cognitive impairment of the subjects, self-report scales were fully implemented and completed by the evaluators to increase reliability. Additional information was retrieved from the review of the subjects' records and via contact with the treating physician.

Statistical analysis

Mean and standard deviation were used to evaluate descriptive data. The Spearman correlation coefficient (ρ or *rho*) was used to observe the relationship between symptom severity and the other variables in the sample. Statistical significance was set at $p < 0.05$. Correlations were limited to the aims of the investigation, avoiding the effects of multiple comparisons in a small sample.

Results

The sample included 11 men and 9 women, and most subjects had a low level of formal education (only 4 high school graduates; Table 1).

General clinical variables identified during patient interview are found in Table 2. We only re-evaluated

Table 1 - Sociodemographic data (n = 20)

Variable	Values
Age (years ± standard deviation)	41.3±10.4
Sex	
Male	11
Female	9
Education	
Elementary school	16
High school	3
Higher education	1
Marital status	
Not married	15
Married	1
Divorced/widowed	4

Table 2 - Clinical data (n = 20)

Variable	Values
Age at first psychosis (years ± standard deviation)	21.3±5.6
Predominant dimension of psychosis	
Hallucinations and delusions	16
Negative symptoms	2
Disorganized speech	2
Family history of psychiatric illness	
Schizophrenia	7
Other psychiatric disorders	4
Unknown	9
Alcohol and illicit drugs abuse	4

known factors affecting the presentation of schizophrenia in order to ensure the reliability of our study. We did not reevaluate the presence of comorbid disorders, non-psychiatric diseases, or other clinical factors as this was not deemed relevant to our study. All patients enrolled were hospitalized for the treatment of active psychosis.

Other clinical data related to attachment development are presented in Table 3. In the sexual abuse variable, "could not answer" was chosen when neither the individual nor their family or caregiver could clearly define an affirmative or negative answer about a possible sexual abuse, which made us conclude that this event may or may not have happened.

Moderate and significant correlations between attachment patterns and early trauma showed that greater severity of anxious attachment was

predicted by a higher frequency of total early traumas (Spearman ρ = 0.446, p = .04), mainly general traumas (ρ = 0.526, p = .017), including parental illness and separation, as well as natural disaster and serious accidents (Table 4).

Among the correlations between early trauma and comorbid symptoms, panic attacks occurring before the onset of schizophrenia showed significant and positive correlations with early trauma inventory total scores and sexual trauma subscale (Table 5).

Discussion

Mean levels of attachment were 4.63±1.61 for anxious attachment and 5.04±1.61 for avoidant attachment. A general population study showed much lower scores, of 2.12±1.08 and 2.32±0.75, respectively.[5] Moderate correlations between anxious attachment and the occurrence of early trauma were identified. The higher the frequency of early trauma, the greater the severity of anxious attachment type in patients with schizophrenia in our sample (Table 4). This is consistent with research showing that early trauma predicts later panic anxiety.[15]

A recent research concluded that exposure to maltreatment in childhood is associated with comorbid anxiety disorders among individuals living with bipolar disorder. Bipolar disorder with comorbid anxiety may constitute a separate etiological type with a greater contribution of early environment.[16]

The ETISR-SF focuses on traumas occurring before the age of 18 years – a crucial period for emotional development. Early traumas result in relational and attachment difficulties, potentially altering enduring aspects of mental function. So, these childhood events are psychosocial risk factors for the subsequent development of mental disorders in emotionally vulnerable children. To Dozier & Bernard,[17] relations with caregivers serve as a basis for the development of attachment in children of different ages. Quality of

Table 3 - Attachment-related clinical data as self-reported during interview (n = 20)

Variable	n
Birth order	
First-born	8
Caregiver changes*	
Two or more	16
None	4
Parental loss or abandonment	
Yes	15
No	5
Sexual abuse†	
Yes	11
Could not answer	5
No	4
Difficulties with own children	
Does not have children by choice	10
Does not raise the children/does not live with them	8
Rejected the child after birth	2

* Parental divorce, birth of siblings and change in financial situation.
† Being forced or coerced to touch another person's private parts or to have sex against their will.

Table 4 - Correlation between trauma and attachment patterns

ECR-RS category*	General trauma†	Physical trauma	Emotional trauma	Sexual trauma	Total
Avoidant attachment	0.0215 p = 0.92	0.160 p = 0.50	0.078 p = 0.74	0.188 p = 0.42	0.027 p = 0.90
Anxious attachment	**0.526 p = 0.01**	0.387 p = 0.09	0.086 p = 0.71	0.0233 p = 0.32	**0.446 p = 0.04**

ECR-RS = Experience in Close Relationships – Relationship Structures.
* Attachment patterns defined by the ECR-RS.
† General trauma: including parental illness and separation, as well as natural disaster and serious accidents.

child attachment appears to depend substantially on the ability of those responsible for the child. When the caregiver is responsive, the child tends to develop secure attachments, seeking support when feeling distressed. When the caregiver rejects the child's care needs, this tends to promote avoidance of care and resistant attachments – physical proximity but emotional self-reliance.

The quality of attachment has been associated with behavioral problems later in life, particularly prediction of psychotic symptoms. Anxious attachment individuals tend to develop a hypersensitivity to attachment failures and frustrations resulting from interpersonal relationships, which is reflected in the relationships formed throughout life. Children with an unstable emotional core are more vulnerable to regulatory stress and to the development of psychopathology.[18]

Loss or parental rejection was present as a traumatic factor in 16 subjects (Table 3). Early separations can interfere with bond formation between children and parents and reduce the likelihood of a stable and safe relationship. The loss of confidence in the availability of their caregivers frequently precedes anxious symptoms.[19-21] When parents or caregivers are inattentive to the mental state of the child, the developing sense of self-reliance in the child can be affected. In abusive families, the development of the child's mental representations tends to occur more rigidly and maladaptively. This way, the child's capacity to understand others through their own feelings can be considerably disrupted.[22] It is also possible that these children may share inherited psychological components from their parents, perhaps including panic anxiety, social anxiety and atypical depression.

Wicks et al.[23] investigated a wide range of social factors in childhood and risk of psychosis later in life. Individuals with four adversity measurements showed a 2.7 times higher risk of schizophrenia. The adversities assessed were low socioeconomic status, single parent families, parental loss, unemployment and social deprivation. In our sample, 11 subjects diagnosed with schizophrenia reported childhood sexual abuse, 5 could not answer this question, and 4 definitely said that

they did not recall any such event. There was also a correlation between reported sexual abuse in childhood and anxious attachment. The concept of trauma used in this assessment covers from abuse (including physical and sexual violence) to any act, omission or neglect by a parent or caregiver, resulting in harm, potential damage or threat of damage to the individual. Read et al.[24] in a review of 51 studies on childhood abuse and psychosis, observed that psychosocial stressors can trigger psychotic symptoms by disrupting cognitive processes or by causing emotional changes in predisposed individuals.

The correlation between general trauma and panic episodes (Table 5) can be explained by impaired psychological development during childhood, along with heritable and other factors. Panic is often preceded by early separation anxiety in childhood or adolescence.[25] Infants and young children who have suffered physical or psychological trauma during periods important for the development of personality can become more susceptible to panic and anxiety in adulthood.[26] In a study aiming to determine the frequency of panic attacks in schizophrenia, Goodwin et al.[27] studied 291 subjects and found that panic attacks occurred in almost half (45%) of the patients with schizophrenia. Considering the importance of early traumas for the increased risk of schizophrenia and panic and the high prevalence of panic attacks in patients with schizophrenia, a common pathway between these disorders may be speculated.

This study covers a limited sample, in which 20 subjects from a hospital in the municipality of Campo Grande, Brazil, were analyzed. Therefore, the findings are not generalizable. More extensive investigations should be conducted to correlate existing theoretical postulations and updated research.

Conclusion

Understanding psychosocial developmental risks provides additional evidence that these risk factors are especially relevant to the schizophrenia spectrum. This study evaluates the importance of understanding

Table 5 - Occurrence of trauma and related comorbidities

ETISR-SF	Depression	Mania	Hallucinations and panic	Panic pre-hallucination
Total trauma	0.055 p = 0.81	0.407 p = 0.07	0.328 p = 0.15	**0.435** **p = 0.05**
Sexual trauma	0.010 p = 0.96	0.402 p = 0.07	0.247 p = 0.29	**0.505** **p = 0.02**

ETISR-SF = Early Trauma Inventory Self Report-Short Form (total trauma scores and sexual trauma subscale).

development processes even before the initial manifestation of psychopathological disorders. Findings show that certain pathological pathways follow adaptive failures in early development. If the impact of these changes can be managed and understood, there is a possibility for repair of adaptive capacities, thus preventing more serious outcomes.

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