Impact of reversionary and other etiological factors on prognosis and course of schizophrenia

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ABSTRACT

Aim To identify the presence of schizophrenia among patients and their relatives, factors affecting duration and prognosis of the disease and other etiological factors related to schizophrenia.

Methods This retrospective, descriptive, analytical and epidemiological research, which was conducted at the Psychiatric hospital of the Clinical Center of the University of Sarajevo during 2007, covered randomly selected 100 hospitalized patients with schizophrenia according to diagnostic criteria of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV). Diagnosis of schizophrenia among relatives was based on anamnesis-Structural Clinical Interview (SCID) and it was applied to confirm DSM-IV diagnosis of schizophrenia.

Results The presence of schizophrenia among patient relatives was the most important in etiology of schizophrenia (62%), and etiological factors were represented in 38% of examinees (p=0.0001). Among relatives of examinees aged 20 – 30 years, schizophrenia was present in 37 (59.7%) cases. Schizophrenia among relatives caused earlier appearance of the disease. Duration of hospitalization of over 60 days was in the group of examinees which have the relatives with schizophrenia, 18 (29.0%); multiple hospitalizations were noted in the group of relatives in 40 (64.5%) cases; in one case (8.3%) traumatic experience was noted, in three (42.8%) acute stress, and in four cases (28.6%) non-adequate living conditions.

Conclusions The results of this study show that reversionary factors are responsible for inducing schizophrenia, which leads towards chronic course of the disease and worsened prognosis.

Key words: schizophrenia, relatives, reversion, stress, etiology, epidemiology.
INTRODUCTION

Schizophrenia is the most serious and most common mental disorder that is mostly characterized with disruptions in opinion making and observation process, while emotions are non-adequate or blunt (1). Disease has a chronic course with deteriorations and remissions and it is a significant medical – sociological issue (2-5). Etiological factors of schizophrenia could be separated into predisposing (genetic factors, environmental factors), precipitating (acute stress) and perpetuating (chronic stress, emotional “atmosphere” that patient is living at) (6-8).

Reduction of epidemiological researches from the social community to the family level has enabled a more precise research of the role and importance of reversionary factors (a person is likely to have schizophrenia if other members of the family also have schizophrenia and that the likelihood of the person’s having schizophrenia is correlated with the closeness of the relationships: e.g. first-degree or second-degree relative) as well as environmental factors relevant for mental health, onset and course of psychiatric disorders (9-11). Genealogical studies represent the oldest and most relevant form of researches about the presence of schizophrenia among relatives (5,12-15).

The risk of developing schizophrenia is higher if one or both parents have the schizophrenia, but it does not mean that every child with schizophrenic parents would develop the disease itself (2). Even though it is clear that there is a heredity basis of schizophrenia, frequency of diseases with monozygotic twins could be different, which indicates that disease with certain gene-type is not reversionary, but reversionary is predisposition or tendency to develop the disorder (5, 6, 9, 10). This statement is supported by many studies on progenies of monozygotic twins with different diseases (one twin develops a disease, and other does not) that indicate comparable risk for developing diseases with progenies of affected and non-affected twin (7,8,16).

This shows that specific presence of schizophrenia among relatives that confirm and transfer a predisposition to disease are transferred, and they do not have to be expressed (17).

Environmental factors are among the etiological factors involved in the appearance of schizophrenia. Diagnose of schizophrenia among relatives could cause inheritance of neurotransmitter abnormalities among relatives (17,18). Relevant world researches are mostly related to studies on multiple genes, genomes, and environmental factors. There is a lack of studies in our region related to comparison of reversionary and other etiological factors of schizophrenia. That is one of the reasons why we decided to conduct our study.

The aim of this study was to determine the age-specific prevalence of schizophrenia, the presence of schizophrenia among patient relatives, etiological factors responsible for the development of schizophrenia, other etiological factors affecting course and prognosis of the disease (by observing a number of cases and duration of hospitalization).

PATIENTS AND METHODS

After an approval of Ethic Committee Clinical Centre Sarajevo University had been obtained one hundred patients who were hospitalized because of the diagnosed schizophrenia during 2007 were assessed retrospectively. Subjects were evaluated by experienced clinicians using the SCID-I interview for DSM-IV at the Psychiatric Clinic of the Clinical Center of the University in Sarajevo. Inclusion criteria for the study were one hundred patients randomly selected whose diagnosis of schizophrenia was confirmed according to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV F20X, irrespective of subtype) (19).

Patients’ medical records were used for the examination of variables: demographic data (gender, age, education level, employment, income and socio-economic status, marital status, occurrence of schizophrenia within the family, number and duration of hospitalizations), the presence of schizophrenia among patients’ relatives, or presence of schizophrenia in parents, siblings or cousins), other etiological factors involved in the appearance of schizophrenia (traumatic event, acute stress, non adequate living conditions). Family relations were determined according to the Structured Clinical Interview for DSM disorders

RESULTS

The prevalence of schizophrenia was significantly higher in females, 65 (65%), than in males,
The prevalence of schizophrenia was decreasing with the decrease of patients’ age: the highest prevalence was noted in patients 20-30 years of age, 47 (47%), and lowest one in patients 50-60 years of age, nine of them (9%). In the age groups 30-40 and 40-50 years the prevalence was 25 (25%) and 19 (19%), respectively.

The reversionary factors were mostly presented in etiology of schizophrenia, in 62 patients (62%). Acquired etiological factors were presented in 38 (38%) patients: traumatic events were responsible for the disease occurrence in 12%, acute stress in 7%, chronic stress in 5%, and non-adequate living conditions in 14% of cases.

Table 1 shows etiological factors of schizophrenia in relation to patients age of disease occurrence:

<table>
<thead>
<tr>
<th>Age (years) when disease was diagnosed</th>
<th>Presence among relatives (%)</th>
<th>Traumatic events (%)</th>
<th>Acute stress (%)</th>
<th>Chronic stress (%)</th>
<th>Inadequate living conditions (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-30</td>
<td>37 (59.7)</td>
<td>2 (16.7)</td>
<td>0</td>
<td>8 (57.1)</td>
<td>47 (47.0)</td>
<td></td>
</tr>
<tr>
<td>30-40</td>
<td>10 (16.1)</td>
<td>7 (58.3)</td>
<td>6 (58.7)</td>
<td>0 (0)</td>
<td>2 (14.3)</td>
<td>25 (25.0)</td>
</tr>
<tr>
<td>40-50</td>
<td>15 (24.1)</td>
<td>0</td>
<td>0</td>
<td>4 (80.0)</td>
<td>0</td>
<td>19 (19.0)</td>
</tr>
<tr>
<td>50-60</td>
<td>0</td>
<td>3 (25.0)</td>
<td>1 (14.3)</td>
<td>1 (20.0)</td>
<td>4 (28.6)</td>
<td>9 (9.0)</td>
</tr>
<tr>
<td>Total</td>
<td>62 (62.0)</td>
<td>12 (12.0)</td>
<td>7 (7.0)</td>
<td>5 (5.0)</td>
<td>14 (14.0)</td>
<td>100</td>
</tr>
</tbody>
</table>

*Χ²=61,921, p=0,0001

35 (35%). The prevalence of schizophrenia was decreasing with the decrease of patients’ age: the highest prevalence was noted in patients 20-30 years of age, 47 (47%), and lowest one in patients 50-60 years of age, nine of them (9%). In the age groups 30-40 and 40-50 years the prevalence was 25 (25%) and 19 (19%), respectively.

The reversionary factors were mostly presented in etiology of schizophrenia, in 62 patients (62%). Acquired etiological factors were presented in 38 (38%) patients: traumatic events were responsible for the disease occurrence in 12%, acute stress in 7%, chronic stress in 5%, and non-adequate living conditions in 14% of cases.

The most common presence of schizophrenia among relatives was noted within the age group of 20-30, in 37 (59.7%) of cases.

Table 2 shows duration of hospitalization in relation to etiological factors, with different tendencies. Multiple and extended (more than 60 days) hospitalizations were noted among examinees with acquired etiological factors, e.g. traumatic events in twelve (12%), acute stress in seven (7%), chronic stress in five (5%), and non-adequate living conditions in four (4%) cases.

Table 3 represents the number of hospitalizations in relation to etiological factors: multiple hospitalizations were the most frequent among patients with the disease among relatives (4, 5%), and none among patients with chronic stress as an etiological factor.

**DISCUSSION**

The results of this research have shown female/male ratio of 35:65, and the highest prevalence of schizophrenia in patients in the age group 20-30 (47%), which is in accordance with the results of other researches (2-5). The presence of schizophrenia among relatives was the most important factor in etiology of schizophrenia in this research (62%), whereas among other etiological factors (38%) traumatic events were responsible for disease appearance in 12%, acute stress in 7%, chronic stress in 5%, and non-adequate living conditions in 14% cases.

Dominant genetic etiological factors, as well as some risk factors for disease development in he-
althy individuals were also shown in other researches (3, 19). According to this, some authors recommend screening of vulnerable patients in prevention of schizophrenia on-set (3, 19-21).

The most common presence of schizophrenia among relatives was noted within the age group of 20-30, in 37 (59.7%) cases. These results were similar to other results (5,14, 20). Current data indicate the appearance of the disease in early twenties in the examinees with positive heredity, as well as much more malignant course of the disease, or the worse prognosis (22-24).

The group of authors from Spain has stated that the appearance of schizophrenia in an earlier age of life has a better prognostic sign, which is opposite to our results. The same authors indicated irrelevance of other socio-demographic factors to the development of schizophrenia (25).

Multiple and extended (more than 60 days) hospitalizations were noted among examinees with positive history of schizophrenia among their relatives (62%). Shorter and less frequent hospitalizations occurred among examinees with acquired etiological factors (38%). These results match the results of researches, where authors indicated the appearance of the disease with a bad prognostic sign, especially according to the number and duration of hospitalizations. The same authors also discuss living conditions, education level and age as bad for prognostic factors for the disease (26-30).

This research has shown that most of the presented factors responsible for the appearance of schizophrenia occurred in patients with positive family history for schizophrenia, which leads towards a chronic course of the disease and worsened prognosis.

Prevention of schizophrenia is an important issue related to the treatment. There are two steps in the prevention: identification of persons at risk, and their successful treatment.

Investigation of the factors involved in the appearance of schizophrenia from a specific geographic region (Bosnia and Herzegovina) could serve as a basis for its comparison with other regions in order to bring better understanding and develop prevention of this disorder. This study could be continued with a large sample and conducted in multiple mental centers aimed at prevention and better understanding of causes and consequences of the disease.

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REFERENCES


