Birth Order and Schizophrenia

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Abstract

Schizophrenia is an important disorder in psychiatry with an unknown etiology. Many factors (e.g. birth order) have been mentioned as its risk factor. Since few studies with scientific designs on birth order and schizophrenia have been performed in Iran, this study was conducted.

Every consecutive patient in psychiatric ward for 3 months was assessed and categorized according to the DSM-IV into four groups (i.e. schizophrenia, schizoaffective and bipolar, major depressive disorder and others) and demographic characteristics (age, sex, birth order and family size) were evaluated.

In comparison with the non-schizophrenic group, this study indicated that schizophrenia is more prevalent among the first-born children (P<0.01), even in schizophrenic group itself, the first-born child was more commonly affected (P<0.001). This result was independent from age, sex and family size.

Key words: Birth order, schizophrenia

Introduction

Schizophrenia as the most debilitating psychiatric disorder affects 1% of the population during their life.1 Despite development of new generation of antipsychotics drugs, one third of patients still require continuous hospitalization. The etiology of schizophrenia as syndrome is still unknown, however several factors generally were considered as nature risk factors.1,2 Some researches have indicated that schizophrenia seem to be more prevalent in first-born children 1,4,5,6,7 due to birth complication during the first delivery8, but this remark is not generally accepted9,10. Data also described the more prevalence of schizophrenia in the last children.11,12 There are still studies not supporting the two above notions, indicating no difference in birth rate.13,14,15,16,17,18

In general, nearly all of the above findings were directly provided by the studies on small size families (a finding not generalize to developing countries).19-20 So, this study have been performed to examine the relationship of schizophrenia and birth order in Iran.

Patients and Method

For three months, every consecutive patient admitted to Imam Hossain general hospital in Tehran was assessed only if they were over 15 years of age.1 Patients were first interviewed by a psychiatry resident and were subsequently diagnosed according to DSM-IV. Demographic characteristics as age, sex, birth order and the number of siblings were also recorded. Still birth was not included but any death after the birth was considered. To compare major psychiatric syndromes, patients were categorized into following diagnostic groups:

a. Schizophrenia
b. Schizoaffective disorder (bipolar type) or bipolar disorder
c. Major depressive disorder
d. Other psychiatric disorders

Considering phenomenological similarities, both schizoaffective disorder and bipolar disorder were included into one group. The data was analyzed by SPSS10.

Results

31 patients were excluded from the study (3 were adopted children and 28 for uncertain diagnoses). 1920 patients fulfilled the inclusion criteria and they were categorized as schizophrenia 284 (20%), schizoaffective 607 (31.6%) and bipolar disorder, major depressive disorder 480 (25%) and, other psychiatric disorders 449 (23.4%).

Mean age for the groups were as follows: schizophrenia 29.7±9.1, schizoaffective and bipolar disorder 30.7±15.2, major depressive disorder 38.8±11.2 and other psychiatric disorder 32.1±4.7. Groups were comparable for age and sex. Schizophrenia was found to be more prevalent among the first children of the families (P<0.01) (Table 1). The difference in birth order among the groups also reached statistical significance when non-schizophrenia groups were pooled.
and subsequently compared with schizophrenics group (P=0.001). Age was not considered as a confounder, as both above 30 and below 30 schizophrenics were more of first born (P=0.3)(Table 2). Birth order in schizophrenia was not related to sex of the patients as both men and women were more of first born (P=0.1) (Table 3). We did not find any relationship between the family size and birth order in schizophrenic patients (P=0.5).

Discussion
Results indicated the more prevalence of schizophrenia in first children. The finding seems unique for schizophrenia as no other major psychiatric syndrome showed this feature. Factors such as family size or age did not indicate the more prevalence of schizophrenia in the first children, in contrast to the study by Price.20 Our findings were comparable to what previous studies have shown about the birth order in schizophrenia.1,14,6,7

However, studies by Scholer11 or Farina12 back to 50 years ago do not support our findings. This might be due to the administration of different diagnostic criteria. Factors such as socioeconomic status or parents’ age were not probed in our study, Sandler17 and Malamud18 considered these to be responsible for the difference of results among studies. McDonald11, Westergard14, Sham15 and Stempel16 showed no difference between birth order and risk for schizophrenia, this disagreement maybe to be due to the different designs and inclusion and exclusion criteria.

Other siblings of a schizophrenic patients might be affected as well, but this is not included in our study. Therefore more precise analytical investigations of birth role in schizophrenia in the form of cohort and multicentric studies in the society would be needed to recognize the risk factors of schizophrenia.

<table>
<thead>
<tr>
<th>Diagnostic category</th>
<th>Schizophrenia (No.=384)</th>
<th>Schizoaffective &amp; bipolar (No.=607)</th>
<th>Major depressive disorder (No.=480)</th>
<th>Others (No.=449)</th>
<th>Total (No.=1920)</th>
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</thead>
<tbody>
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<td></td>
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</tr>
<tr>
<td>First</td>
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<td>288</td>
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<td>293</td>
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<td></td>
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<tr>
<td>Second and more</td>
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<td>319</td>
<td>228</td>
<td>210</td>
<td>890</td>
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<td></td>
<td>(34.6%)</td>
<td>(52.6%)</td>
<td>(47.5%)</td>
<td>(46.8%)</td>
<td>(46.4%)</td>
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</tbody>
</table>

<table>
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<th>Age</th>
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<th>Equal or more than 30 years (No.=181)</th>
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<td>251</td>
</tr>
<tr>
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<tr>
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<td>(60.8%)</td>
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<td>71</td>
<td>133</td>
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<td>(30.6%)</td>
<td>(39.2%)</td>
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<th>Female (No.=177)</th>
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<tr>
<td>First</td>
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<td>251</td>
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<td>(63.3%)</td>
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<tr>
<td>Second and more</td>
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<td>133</td>
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<td></td>
<td>(32.9%)</td>
<td>(36.7%)</td>
<td>(34.6%)</td>
</tr>
</tbody>
</table>

References
13. McDonald C et al. Number of older sibling of individuals diagnosed with schizophrenia. Schizophr Res. 2000; 47: 275-80