

## Short Communications

# Schizophrenia – a Disease of Young Single Males?

## Preliminary Results from an Investigation on a Representative Cohort Admitted to Hospital for the First Time

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**Summary.** The later age at onset of schizophrenia in females, reported in the literature, led to a study of transnational case register data and of a cohort of all patients admitted to hospital for the first time with a non-affective functional psychosis from a defined catchment area. The preliminary analysis of the first representative sample of 86 patients showed that at the time of first admission with a diagnosis of schizophrenia (according to different diagnostic definitions) as well as at the time of onset of the disease (operationalized on different levels) females were on average 5 years older than males. Singles, and even more so young single males, were clearly overrepresented among those first hospitalized in comparison to the population of the same age. To remain single seems to be in most cases a consequence of the disease or of premorbid characteristics in those predisposed to schizophrenia.

**Key words:** Sex differences – Schizophrenic disorders – Age at onset – Age at first hospitalization – Marital status

Sex differences in age at onset and in age at first admission for schizophrenia are the most consistent epidemiological findings (Häfner 1987). Many authors agree that at the time of first hospitalization for this diagnosis as well as at the time of true onset of the disease males are between 5 and 10 years younger than females (cf. Angermeyer and Kühn 1988). In a transnational case register study we have shown that the sex difference in age at first admission is not a consequence of artefacts and have given some indication that it is not due to a different time lag between

first onset and first admission either (Häfner et al. 1989). However, in none of the studies published so far has the true onset of the disease been operationalized and assessed by standardized methods.

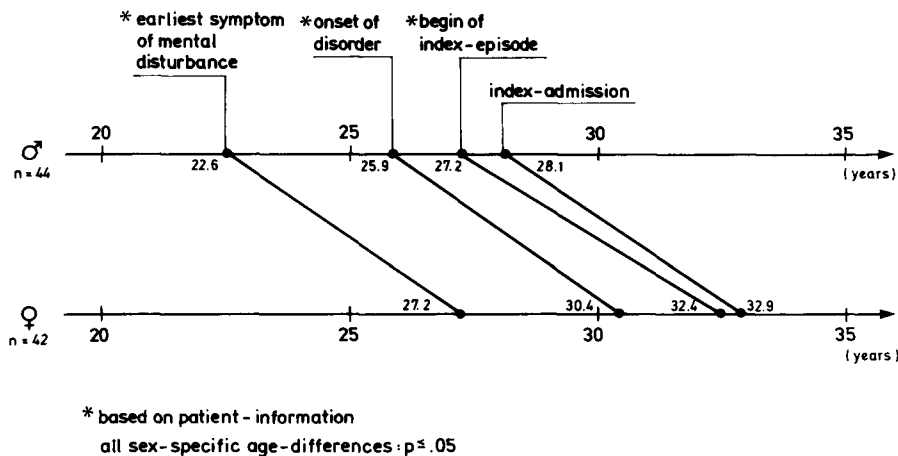
Therefore we constructed a semi-structured „Interview for the retrospective assessment of the onset of schizophrenia” (IRAOS) (Häfner et al. 1988), which allows assessment of the onset at different levels of operationalization, by interviewing the patient him-/herself and a contact person.

During 2 years, from 1987 to 1989, we assessed all 12- to 59-year-old individuals of a population of about 1.4 million, who were admitted to a psychiatric hospital for the first time because of a non-affective functional psychosis (ICD-9: 295, 297, 298.3, 298.4). We report a preliminary analysis of the first representative sample of the 1st year and from a population of 0.8 million (44 males, 42 females).

To test statistical significance we subjected differences in the means of the sex-specific age distributions to *t*-tests. When covariates were included, a two-way analysis of variance was applied. Chi-square tests were performed to assess relationships between gender and covariates measured by nominal scales.

## Results

Ninety-one per cent of the males and 76% of the females received the clinical diagnosis of schizophrenia (ICD 295), called “restrictive definition schizophrenia”, the others a schizophrenia-like diagnosis (ICD 297, ICD 298.3 and ICD 298.4). The psychopathological symptoms were assessed by the Present State Examination (9th revision) (Wing et al. 1974) and summarized into syndrome profiles by CATEGO.



**Fig. 1.** Mean age at different times during the development of the disorder (ICD 9-295, 297, 298.3, 298.4). (Mannheim, Heidelberg, Rhein-Neckar-District - 1987/1988)

There were no significant sex differences either on symptom or on syndrome level.

The mean age at first admission in the case of the broad diagnostic definition (all inclusion diagnoses) was 28.1 years for males and 32.9 years for females, in the case of the restrictive diagnostic definition 28.2 years for males and 30.3 years for females. The age distribution of males was characterized by a peak in the age group 20-24 years for the broad diagnostic definition as well as for the restrictive diagnostic definition. In females there was a very broad distribution with a less marked peak in the age group 25-29 years.

School and professional education as well as the highest achieved occupational status did not show any difference between the sexes. Occupation did not explain the sex difference in age at first hospitalization. At the time of first hospitalization employed men were on average 32.4 years old, employed women 35.0 years old; unemployed men were 26.4 years, unemployed women 32.9 years old. Only gender but not professional activity had a significant main effect in the analysis of variance.

When classifying by marital status we found that at the time of index admission 34 males were single and only 8 married, whereas amongst females 18 were single and 20 married. As in our case register study (Häfner et al. 1989), where we found a significant excess of young single males among the patients hospitalized for the first time in comparison with the population, the lower mean age of males is therefore mainly due to the high proportion of young singles.

This result raises the question of the causal connection between marital status and age at first hospitalization. Is the higher risk of young single males in most cases a consequence of their "being single" or do males predisposed to schizophrenia more often remain single? In order to find the direction of this connection we considered the chronological order of

onset and marriage of those patients who have ever been married: 9 of the 44 males examined had been married before their first hospitalization and 21 of the 42 females. However, only 1 man and 4 women married after the first signs of a mental disorder; for 3 females but none of the males it was the first marriage. All the others had married before onset and a great number of them has been divorced in the meantime. To remain single, therefore, seems to be in most cases a consequence of the early occurrence of the disease or of premorbid deficits in social competence rather than the disease being a consequence of "remaining single".

Figure 1 shows the age means of males and females at different stages of the disease. Concerning the disease-related events, such as first signs of a mental disturbance, general assessment of the onset of the disease, begin of the present episode and first hospitalization for a broad definition schizophrenia (ICD 295, 297, 298.3 and 298.4), the mean age of females was generally about 5 years higher in comparison with males. We also have assessments by contact persons in the case of 26 male and 33 female patients. Here we also noticed a clear age difference in the same direction. The "general assessment of the onset of the disease" was estimated at an average of 24.3 years for males and 32.4 years for females.

In the case of the restrictive diagnosis of "schizophrenia" (ICD 295) males were also younger than females at all stages of onset. However, being only 2.1 years at the time of inclusion diagnosis, 2.7 years at the beginning of the "present episode", 2.3 years at the general assessment of onset and 3.0 years at the time of the "earliest signs of a mental disturbance", the differences were clearly lower than for the broad diagnosis. This is due to the high number of older females in the additional diagnostic groups defining the broad diagnosis.

## Discussion

In direct analysis of our inquiry we confirmed the result of our transnational case register study: there was an about 5 years higher mean age of females at first admission for schizophrenia. About the same sex difference exists evidently at first appearance of symptoms and episodes independently of different operational definitions and information sources. This gender difference is independent of occupational status which covariates with gender, but not of marital status. Young single males are clearly in excess among the first hospitalized. This is probably in most cases a consequence of the males' earlier onset or their pre-morbid personality, which is indicated by the chronological order of onset and marriage.

In contrast with the age of onset the cumulative lifetime risk seems to be the same for both sexes (Ødegaard 1971; Häfner 1971; Dohrenwend and Dohrenwend 1976; Häfner 1988). As females do not develop schizophrenia more rarely, but in fact do so later, there might be moderating psychological or biological factors which reduce vulnerability of young females and/or enhance vulnerability in young males or may influence the risk of triggering episodes. We intend to study these questions by further analysis of the population study.

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