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Influence of age at onset on social functioning in outpatients with schizophrenia

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ABSTRACT – *Background and Objectives:* There are different factors that have been found to predict disability in schizophrenia. The aim of our study is to evaluate the influence of age at onset on social functioning in schizophrenia in a large sample of schizophrenic outpatients controlling for gender.

Methods: Two hundred and thirty-one subjects with schizophrenia (DSM-IV criteria) were randomly selected from a register that included all patients under treatment in five mental health care centers (MHCC) in Spain. Patients were evaluated with a sociodemographic and clinical questionnaire, and the Spanish version of the Living Skills Profile (LSP). Pearson's analyses were performed between age at onset and LSP, and an ANOVA analysis to compare three groups of age at onset (early, middle and late). Gender was introduced as a covariable.

Results: Mean age at onset of the total sample was 23 (sd 7.35), with women having a later age at onset than men (women 24.6 (sd 9.1) ; men 22.2 (sd 5.9) ($p<0.05$)). The relation between age at onset and social functioning was only significant in the not interpersonal social behavior subscale ($p<0.01$). Early age at onset was positively related to social contact-communication ($p<0.05$), not interpersonal social behavior ($p<0.05$) and total LSP score ($p<0.05$). When including gender as a covariable, a significant relationship between age at onset and social functioning was found in most of the LSP subscales.

Conclusions: Early onset of illness negatively influences psychosocial functioning, especially in the areas of communication, not interpersonal social behaviour and self-care. Female gender positively influences most aspects of social functioning.

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Introduction

Schizophrenia is a chronic disorder that usually causes marked social impairment. It has been reported that more than 60% of people with schizophrenia have severe disability, which usually appears in first five years after onset[1]. Many individual and disease characteristics as well as environmental factors contribute to the development of disability. Age at onset seems to be related to disability[2,3], with early age at onset predicting a greater impairment[4].

Gender has also been found to influence social functioning, with men performing worse socially than women[5]. Age at onset shows also gender differences, and most of the studies find that men have an earlier age at onset than women[6]. Early age at onset seems to have a different influence on men and women social functioning[5], but is it no well know how the two factors interact on disability.

Few studies have evaluated the relation between disability and age at onset in schizophrenia, and none of them, to our knowledge has used a specific scale to assess social functioning. Among the instruments for assessing disability in schizophrenia, we chose for our study the Life Skills Profile (LSP) scale, which is a scale specifically developed to measure social functioning and disability in patients diagnosed with schizophrenia. The scale is useful both for research and clinical description, and it helps to design clinical interventions and assess their effects[7].

The aim of this study was to evaluate the influence of age of onset in social functioning of patients with schizophrenia in a large sample of outpatients with schizophrenia, controlling for gender.

Method

Patients

Two-hundred and thirty-one subjects with schizophrenia were randomly selected from a computerized register that included all patients under treatment in the five mental health care centres that participated in the study. The five catchment areas (Cerdanyola, Ciutat Vella, Cornellà, Gavà, El Prat) include a population of 440,000 adults from the city of Barcelona and its surroundings and represent different sociodemographic environments.

Inclusion criteria were: a) to have a primary diagnosis of schizophrenia according to DSM-IV criteria; b) age between 18 and 65 years; c) to live in the catchment area; and d) to at least have received an outpatient visit during the six months previous to the beginning of the study. Patients with a diagnosis of mental retardation or neurological disorder were excluded.

Selected individuals were informed by their psychiatrist on the objectives and methodology of the study and provided his/her verbal informed consent to participate. Further details on the study design are provided elsewhere[8,9].

Evaluation

All patients were evaluated with the following questionnaires:

– A sociodemographic questionnaire, that included information as to age, gender, living situation, level of education, and their psychiatric history and comorbidity (age at onset, number of hospitalizations, among other).

– The Spanish version of the Living Skills Profile (LSP)[10]. This questionnaire consists of 39 items that assess social functioning for the last month. A factor analysis resulted in the following five subscales: self-care, interpersonal social behavior, social contact–communication, not interpersonal social behavior, and independence life.

Statistical analysis

We have used Pearson correlation coefficient to analyse the relation between age at onset (in years) and total LSP and each LSP subscale. In order to analyse the influence of age of onset in disability, we have created three categories of age of onset: early, middle and late. Early age at onset was defined through 17 years of age; late onset was defined as more than 30 years of age; and middle age of onset included ages between 17 and 30 years. We performed an ANOVA analysis in order to compare the three groups regarding LSP ratings, applying Bonferroni's post-hoc contrast. Gender was introduced in the ANOVA model as a covariable.

Results

A total of 231 patients were included in the study, 63.6% of them were men. Women were older than men (44 years, sd 12; versus 37 years, sd 11; $p < 0{,}001$), were more often married ($p < 0.001$), and were more frequently living independently ($p < 0.001$).

Mean age at onset of the total sample was 23 years (sd 7.35). When analyzing gender differences regarding age at onset, women's was 24.6 (sd 9.1) and men's 22.2 (sd 5.9) ($p < 0.05$).

The relationship between age at onset and social functioning was only significant in the subscale of not interpersonal social behavior ($p < 0.01$). Subjects with early age at onset had lower scores in this subscale.

The relation between age at onset and gender is shown in Table I.

Table I
Distribution of age at onset

	Age at onset N (%)
Early age of onset (less than 17 years)	33 (14.4)
Men	15 (45.4)
Women	18 (54.5)
Middle age of onset (between 17 and 30 years)	161(70.3)
Men	115 (71.4)
Women	46 (28.6)
Late age of onset (more than 30 years)	35 (15.2)
Men	15 (42.9)
Women	20 (57.1)

Table II describes the relation between the three groups of age at onset and the subscales and total score of LSP. People who had an early age at onset had worse scores in social contact-communication ($p < 0.05$), not interpersonal social behavior ($p < 0.05$) and total score ($p < 0.05$). There were differences between early and late onset in social contact-communication, but differences were not found between early and middle onset; there were differences between the three groups in the other two subscales.

Table II
Social functioning as measured with the Living Skills Profile by age at onset groups.

LSP subscales	Social functioning Mean (SD)
Self care	
Early onset	33.5 (5.4)
Middle onset	35.2 (4.5)
Late onset	36.2 (3.2)
Interpersonal social behaviour	
Early onset	27.3 (3.5)
Middle onset	28.1 (3.4)
Late onset	28.7 (2.4)
Social contact - communication	
Early onset	16.1 (3.3)*
Middle onset	17.8 (3.4)
Late onset	18.5 (3.8)*
Not interpersonal social behaviour	
Early onset	21.5 (2.7)*
Middle onset	21.9 (2.6)
Late onset	23.1 (1.2)*
Independence life	
Early onset	16.3 (4.7)
Middle onset	17.6 (4.8)
Late onset	17.5 (4.2)
Total LSP score	
Early onset	114.7 (13.9)*
Middle onset	120.7 (14.4)
Late onset	124.1 (10.9)*

* $p < 0.05$, ANOVA test.

Another ANOVA analysis was performed including sex as a covariable. The models resulting from this analysis are shown in Table III. A significant relationship between age at onset and social functioning was found in the subscales of self-care, social contact-communication, not interpersonal social behaviour and total scores. Gender was related to social functioning in all subscales, except for not interpersonal social behaviour. There was no significant relationship between age at onset and gender in each subscale of the LSP and total score.

Table III
Anova results of social functioning as measured with the Living Skills Profile by age of onset and gender as covariable.

LSP subscales	Age at onset	Gender	Interaction Gender-age at onset	R^2 of the model
Self care	-2.83 -0.56*	-1.86**	NS	0.064
Interpersonal social behaviour	-1.44 -0.32	-1.1*	NS	0.038
Social contact-communication	-2.41 -0.44**	-1.12*	NS	0.064
Not interpersonal social behaviour	-1.65 -1.00*	-0.49	NS	0.042
Autonomous life	-1.32 0.69	-2.52****	NS	0.070
Total score of LSP	-9.64 -1.64 **	-7.21***	NS	0.091

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.005$; ***** $p < 0.001$.

Discussion

The fact that our sample is overrepresented by men is consistent with the gender composition of schizophrenic subjects reported by most studies[11]. The mean age at onset of our sample, and the finding of a later age at onset in women, are also in line with other studies[12]. When categorizing age at onset into late, middle and early, the proportion of men and women is similar in the extreme groups, while in the middle group we can observe that women develop the illness later[13].

In our sample, subjects who had an earlier onset of illness showed worse scores of psychosocial functioning than those who had a later onset, especially in communication, not interpersonal social behaviour and self-care subscales of LSP. Those social functioning areas in which we found a worse functioning are those that are developed during adolescence, so the results would be explained by the fact that these functions cannot be correctly structured in individuals having an early onset of the illness.

The results of the communication area could be analyzed from Erickson's theory of psychosocial development[14]. This theory states that during adolescence and first adulthood integration-marginalization processes take place and are more marked inside the friends' groups. An interruption in this psychosocial development due to the illness onset will disturb the integration process directly affecting the later social development of patients. The communication area deficit will reflect this development interruption. This impairment could also be explained by the neurodevelopment theory, as subjects with an early onset of illness do not acquire the sufficient abilities in order to successfully develop psychosocially[15]. Hoff[16] found that people with an early age at onset have a greater disability in language abilities as well as more negative symptomatology, also in agreement with Bellino[17].

Areas of interpersonal contact (getting angry, violent, having problems with

drugs, alcohol, etc.) and independence life (be in charge of their own meals, cleaning, work, etc.) did not show significant differences regarding age at onset. This could be explained either by the fact that declining occurs equally in all subtypes of schizophrenia, or that development in these areas occurs later in life.

As regards to the relationship between gender and psychosocial functioning, we found that women did better in all areas measured by the LSP, except for that of not interpersonal social behaviour. The most important difference was found in the independence life area, which is the one that refers to aspects of occupational functioning. Most of the studies that have assessed differences in social functioning in patients with schizophrenia regarding gender have also found a better functioning in women, including those assessing functioning with sociodemographic data[18,19] and those using specific scales as the Disability Assessment Scale (DAS-sv)[20]. In the same line of evidence, Usall[21] found significant differences between men and women in occupational functioning.

Therapeutic implications

– The results of the study suggest that early interventions addressed to improve social development in subjects having an early onset of schizophrenia will result in a better psychosocial functioning.

– The Life Skills Profile (LSP) scale is an adequate instrument for assessing psychosocial functioning in patients with schizophrenia. Our results allow us to make a correct assessment of social functioning in order to design psychosocial rehabilitation programs.

Limitations

– We have assessed social functioning several years after the onset of illness, so we do not have information about the patients' social functioning before the onset of their illness.

– We have evaluated a prevalence sample of patients treated in community mental health services. Patients with good prognosis that are not in treatment have not been included.

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