Fertility and fecundity of an outpatient sample with schizophrenia

Fertilidade e fecundidade em uma amostra de pacientes ambulatoriais com esquizofrenia

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Abstract

Objective: To determine reproductive rates among patients with schizophrenia who attended the outpatient clinic at the Universidade Federal de São Paulo. Method: All patients with schizophrenia completed a semi-standardized questionnaire, and data from the Brazilian census was used for comparing population rates. Results: 167 patients completed the questionnaires and of these 33 (19.8%) were or had been married and 32 reported being a parent. The fertility rate (number of individuals who had had at least one child divided by the total number of individuals) was 19.4% (25% for females, 15.8% for males, p = 0.14). Fecundity rate was 1.75 for males and 1.69 for females (p = 0.85). A logistic regression analysis identified an association between the later date of the onset of illness and higher rate of marriage (p = 0.003). Gender and the interaction between gender and marital status were significant predictors for fertility (p < 0.05 and p = 0.024, respectively). Conclusions: Patients with schizophrenia showed lower rates for marital status, fertility and fecundity when compared to standard population rates. However, many patients will become parents during their life time. Therefore, it is imperative to develop services that fulfill their needs, mainly in Brazil, a middle-income country, where resources are scarce and there is no policy for dealing with this reality.

Descriptors: Schizophrenia; Reproductive behavior; Fertility; Gender identity; Outpatients

Resumo

Objetivo: Determinar as taxas de reprodução de pacientes com esquizofrenia em uma clínica de atendimento ambulatorial da Universidade Federal de São Paulo. Método: Todos os pacientes com diagnóstico de esquizofrenia preencheram um questionário semi-padronizado. Dados do censo Brasileiro foram utilizados para comparação com taxas populacionais. Resultados: 167 pacientes completaram o questionário, dos quais 33 (19,8%) foram alguma vez casados e 32 tiveram filhos. A taxa de fertilidade (indivíduos que tiveram ao menos um filho pelo total de indivíduos) foi de 19,4% (15,8% para homens, 25% para mulheres, p = 0,14). A taxa de fecundidade foi de 1,75 para homens e 1,69 para mulheres (p = 0,85). Análise de regressão logística identificou associação entre idade de início da doença mais tardio com maior taxa de casamento (p = 0,003). Gênero e interação entre gênero e situação conjugal foram significantes preditores para fertilidade (p < 0,05 e p = 0,024; respectivamente). Conclusões: Pacientes com esquizofrenia mostraram menores taxas de casamento, fertilidade e fecundidade quando comparados com taxas populacionais. Contudo, muitos pacientes com esquizofrenia terão filhos durante a vida e há carência de serviços de saúde que atendam às necessidades destes indivíduos, principalmente no Brasil, um país de renda média, onde os recursos são escassos e não existem políticas que abordem esta realidade.

Descritores: Esquizofrenia; Comportamento reprodutivo; Fertilidade; Identidade de gênero; Pacientes ambulatoriais

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Introduction

Patients with schizophrenia marry less and have a lower probability of having children than patients with other mental disorders and the general population at large.[1-5] Due to the policy to reduce hospitalization and the improvements in pharmacological treatment the hypothesis that the deficit in reproductive rates for these patients might be reduced has been raised.[6-7] However, subsequent studies have not confirmed this assumption.[3-5,8-9] Although schizophrenia has a relatively stable epidemiological profile in several countries, issues related to marriage and reproduction are subject to the influence of biological and socio-cultural factors.[1,8-10] Moreover, the reproductive pattern for patients with schizophrenia is influenced by gender, in which male patients are more likely to be single and childless.[3,9,11] Studies on the reproductive fitness of patients with schizophrenia are important in order to understand the genetic epidemiology of the illness and are essential for planning mental health services.[2,12-13] From the social point of view, obtaining accurate data can help to establish preventive measures, improve child care or parenting, and aid in the assessment of needs and the efficacy of family planning programs.[13-14] The objective of this study is evaluate the marital rate, fertility and fecundity in patients with schizophrenia participating in an outpatient program.

Method

The study was conducted at the Schizophrenia Program of the Universidade Federal de São Paulo. This outpatient clinic provides care for people living in the urban area. All patients with schizophrenia, confirmed by ICD-10 diagnosis, were invited to participate, and a semi-structured questionnaire containing demographic and reproduction variables was administered. Patients with a diagnosis of another non-organic psychotic disorder were excluded.

The age at schizophrenia onset was identified as the age when the productive psychotic symptoms of the disease appeared. The marital rate was calculated as the percentage of married patients against the total number of patients. Fertility was defined as the ability to produce live children and fecundity was defined as the mean number of live children born of parent-patients. The general population standards were obtained from the last Brazilian Census data.[15]

The statistical tests used included Person's chi-square tests, t-tests and Mann-Whitney U-test for significance. A logistic regression was carried out to verify the effect of different variables on marital rate and fertility rate. A univariate analysis of variance was performed to verify the effect of different variables on fecundity rate.

The study was approved by the Ethics Committees of UFMT (n.150/04) and UNIFESP (n.0956/06).

Results

The sample was comprised of 167 patients, all of them with a ICD-10 schizophrenia diagnosis. Table 1 shows that there were no gender differences regarding age, age at onset of illness, marital status, and fertility and fecundity rates.

When comparing age and age at onset of illness with ranges by gender, no statistically significant difference in marital rate was found. A logistic regression was performed to verify the influence of gender, age and age at onset of illness upon marital rate. The results showed that only age at onset was associated with marital rate (p = 0.003). Patients older than 20 years old at the onset of illness showed a greater probability

Table 1 – The clinical and sociodemographic characteristics of the sample

	Males (n = 102)	Females (n = 65)	p
Mean current age (years) (SD)	33.3 (10.1)	36.8 (12.7)	0.054*
Mean age at onset (years) (SD)	22.5 (7.6)	23.0 (6.4)	0.685*
Marital status n (%)			0.390**
Single	84 (82.4)	50 (76.9)	
Ever married	18 (17.6)	15 (23.1)	
Fertility n (%)	16 (15.8)	16 (25.0)	0.147**
Fecundity (SD)	1.75 (0.6)	1.69 (1.2)	0.857*

SD: standard deviation *t-test **chi-square

of getting married (odds ratio OR = 4.98; 95% confidence interval $CI_{95\%}$ = 1.70-14.59).

There were no gender differences when comparing the fertility rate by marital status and age and age at onset of illness. Logistic regression was conducted using "being or not being a parent" as a dependent variable, and marital status, gender, age, and age at onset as independent variables and three interactions groups: age and marital status, age at onset and marital status, and finally gender and marital status. The results showed that gender (p = 0.04) and the interaction between gender and marital status (p = 0.02) were significantly associated with fertility. Men who had been married and being a woman were associated with a higher probability of having a child (men ever married OR = 19.9; $CI_{95\%}$ = 1.49-265.51; woman OR = 5.5; $CI_{95\%}$ = 1.01-30.03).

Male patients with age at onset of illness above 20 years old had a higher fecundity rate than female patients of the same age at onset range (1.80 and 1.54, respectively; p = 0.047, Mann-Whitney U-test). A univariate analysis of variance was performed using fecundity as a dependent variable but none of the independent variables had a statistically significant effect.

Patients showed lower reproductive rates when compared to the expect findings in the population of the city of São Paulo. The marital rate was 17.6% for male patients and 68.0% for male population, and 23.1% for female patients and 71.0% for female population ($CI_{95\%}$ = 10.21-24.99; $CI_{95\%}$ = 12.85-33.35, respectively). The fertility rate for female patients was 31.6% ($CI_{95\%}$ = 16.82-46.38) and 73.1% for the female population in the 25-44 years old age range and 28.6% for patients ($CI_{95\%}$ = 4.9-52.3) and 87.3% for the population in the 45 years old and over age range. The fecundity for the women in the sample was 1.69 ($CI_{95\%}$ = 1.02-2.35) and 2.71 for the female population.

Discussion

According to several studies, patients with schizophrenia consistently show lower marital rates.[2-4,9,11] In this study, the data show that the proportion of individuals who had been married was three times lower than that of the general population, regardless of gender.

The lower probability that a patient with schizophrenia will marry is justified based on the disease's intrinsic factors, such as pre-morbid personality traits and inappropriate affection, as well as the number of hospitalizations and cultural restrictions.[1,3,7,9] The marriage rate of patients in the sample was influenced by the patients' ages, and the frequency of individuals who had ever married increased as the patients got older.[3] The age at onset of illness proved to be associated

with marital status. Patients with an earlier onset of illness suffer from greater affection problems, which have a negative impact on their social abilities leading to a lower probability of establishing intimate relationships.[7,9]

Several studies show a gender difference in the proportion of individuals who had ever married,[3,5,11] but in this study, no significant gender difference was found. This could possibly be explained by a decrease in the rate of marriage among female patients caused by the severity of the disease and the number and length of hospitalizations. Such information was not available for analysis.

It is necessary to highlight that the probability of an individual with schizophrenia to get married and a possible gender difference could also be influenced by social and cultural factors.[8-10] There are other factors such as age of marriage, and the number and length of stable relationships that were not investigated in this study. Therefore, further studies may add data to clearly identify the marriage pattern among Brazilian patients.

As it has been described, the fertility rate of these patients proved to be reduced.[3-5,9] The fertility rate of female patients was two to three times lower than the fertility rate in the female population of the city of São Paulo. This result is not in agreement with the suggestion of other authors that women with schizophrenia would have an increased probability of becoming mothers, with fertilities rates similar to those found in the general population.[6,14]

In line with other studies, the fertility rate was shown to be different by gender.[3,5,9] Marital status was a significant predictor of fertility only for male patients, indicating that the reduction in fertility could be due to their difficulty of getting married.[7] It is worth noting that in this sample more than 80% of the men who had ever married had had at least one child.

The gender difference in the reproductive pattern, with female patients showing a lower reproductive deficit, has been justified by gender differences in the disease.[9,14] In this study, women presented a higher probability of having children but married men presented a nineteen-fold higher chance of having children when compared to married women. This finding is not in accordance with most of the studies in the area.[3-5] However, confidence intervals are fairly large and any final conclusion should be made cautiously. This limitation could be caused by the sample size, but could also have been influenced by two important co-variables: the age at onset of illness and the severity of the disorder. The earlier age at onset in men is one of the consistent results replicated in several studies, and is related to a lower possibility of these men getting married, consequently leading to a reduction in reproduction rates.[3,9] There was no gender difference in the age of onset. With regards to the severity of the illness, as this study was carried out at an excellence center, it is possible that there might have been a greater concentration of severe cases. Moreover, patients of the schizophrenia-spectrum disorders were not included in the study. This situation might have resulted in women with an early onset of illness, with greater symptomatology, poor social performance, greater use of antipsychotic medication, and finally resulting in hampering their reproductive pattern.

Marriage and human reproduction are largely influenced by biological, clinical and cultural factors, not all of them covered in this investigation. These shortcomings limited the generalizations of the results.

Conclusions

Patients with schizophrenia showed a reduction in reproductive rates when compared to the expected rates in the general population. However, approximately 20% of the patients do get married and become parents. No matter what, many patients will become parents during their life time, and it is paramount to develop services to fulfill their needs, especially in Brazil, a middle-income country, where resources are scarce and there is no government policy for dealing with this reality.

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