

RESEARCH

Aggression in psychiatry: impact of family history, substance use, psychiatric history, and dual diagnosis

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Abstract

Aims and objectives: Association has been reported between aggression and person(s) with mental illness. This study aimed to assess patterns of aggression, extent to which patients' characteristics (psychiatric history and substance use behaviour) and parental characteristics (substance use and psychiatric disorder in family) predict violent behaviour.

Method: For a period of 12 months, data were collected from the indoor patients. Aggressive incidents and their types were noted. Forms of aggression and their severity were assessed based on questions of the Overt Aggression Scale-Modified (OAS-M). The characteristics of those patients involved in aggressive incidents were compared with those of others who had not been aggressive. Patterns of aggression and their severity were assessed based on questions of OAS-M.

Results: Total 472 patients were included in the study. The prevalence rate of aggression in the study population was 55.7% (n=263). Among the aggressive patients, 53.6% (n=253) exhibited verbal aggression, 36.4% (n=172) exhibited aggression towards objects, 32.2% (n=152) exhibited aggression towards others, and 16.1% (n=76) exhibited aggression towards self (more than one form of aggressive behaviour is noted). There were high correlations of one form of aggression in presence of other forms. Family history of substance abuse, family history of mental illness, substance abuse, psychiatric history, and dual diagnosis were found as major risk factors for the aggressive behaviour.

Conclusions: Present study revealed that patients' characteristics (psychiatric history and substance use behaviour) and parental characteristics (substance use and psychiatric disorder in family) predict violent behaviour. The utility of these factors to identify patients who subsequently will exhibit violent behaviour may provide an empirically substantiated basis for efficient psychiatric population screening for violence prevention.

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Introduction

Aggressive behaviour is a part of basic human nature. It is an adaptive behaviour having its origin in genetically coded neural mechanisms that are acted upon by hormonal and psychosocial factors. It has multiple determinates whose manifestations and effects vary with age, sex, and culture.[1]

There is a commonly held perception that individuals with mental illness are significantly more likely to commit violent crimes. A less acknowledged fact is that the proportion of societal violence attributable to schizophrenia is small. The myths of the relationship between violence and

mental illness contribute to: exaggerated fears of dangerousness, reluctance to seek help, exclusion to housing, jobs, and social supports.

While it is true that some people who have a mental illness do commit crimes, public perceptions of mentally ill persons as criminally dangerous are exaggerated. In fact, 80 to 90 per cent of people with mental illness never commit violent acts.[2]

Variety of patient factors have been implicated as heightened risk for violence including being a young male with a diagnosis of schizophrenia,[3] particularly with neurological impairment;[4] having a history of violence;[5]

and being involuntarily admitted to the hospital.[6,7] Having a diagnosis of dementia or delirium,[8] substance abuse,[9] and personality disorder and bipolar disorder[10] have also been shown to be related to violence.

The opportunity for violence is also strongly contingent on social contextual factors. Family history of psychiatric illness influences violent behaviour. As patients disengage from parental supervision, the friendship network exerts an increasingly powerful influence on behaviour in younger age group.[11] One of the strongest correlates of violent behaviour in patient is substance use.[1,12] People with a major mental disorder diagnosis and without a substance abuse diagnosis are involved in significantly less community violence than people with a co-occurring substance abuse diagnosis.[13,14]

The purpose of this study was to determine patterns of aggression in patients admitted in Psychiatry Department of Gauhati Medical College Hospital (GMCH), Guwahati, Assam, India, and the extent to which patients' characteristics (psychiatric history and substance use behaviour) and parental characteristics (substance use and psychiatric disorder in family) predict violent behaviour. The utility of these factors to identify patients who subsequently will exhibit violent behaviour may provide an empirically substantiated basis for efficient psychiatric population screening for violence prevention.

Materials and method

Sample: The sample consisted of 472 patients from September 2007 to August 2008 of GMCH. The patients admitted from outpatient clinic or from the emergency department were assessed and diagnosed as per the International Statistical Classification of Diseases and Related Health Problems, tenth revision (ICD-10): Clinical Descriptions and Diagnostic guidelines.[15] Cases fulfilling the required inclusion and exclusion criteria as mentioned below were included in the study.

Inclusion criteria: Age above 18 years, informed consent by patients or relatives in accordance to Chapter VIII, Clause (2) of Mental Health Act, 1987.

Exclusion criteria: Unconscious patients including delirium, organic mental disorders, patients without any proper informant.

Tool of investigation: The Overt Aggression Scale-Modified (OAS-M) was developed by E Coccaro and collaborators in 1991 to assess aggressive behaviour.[16] The scale is a 25-item, semi-structured interview with nine subscales. For our study purpose, we assessed the aggression on four subscales which records the forms of aggression and their severity. The four subscales based on increasing severity were: verbal assault, assault against objects, assault against others, and assault against self.

Subjects with aggressive behaviours are defined as those having a total score > zero.

All the patients admitted in the psychiatry ward and drug de-addiction unit were incorporated in the study and characteristic of patients without any reported aggressive behaviour constituted the control group for statistical comparison. All data analyses were performed using the Statistical Packages for Social Sciences, version 11.5 (SPSS-11.5) for windows. Statistical significance was established using the χ^2 test for categorical data, with Fisher's exact test employed when appropriate; a P value of less than 0.05 was considered significant.

Results

Table 1 shows the socio-demographic profile of the study population.

Most common diagnoses were paranoid schizophrenia (F20.0) 26.7%, acute and transient psychotic disorder (F23) 14.4%, dissociative disorder (F44) 10.2%, alcohol dependence (F10.2) 8.3%, bipolar affective disorder, current episode manic (F31.2) 6.4%, and alcohol withdrawal state (F10.3) 5.3% (Figure 1).

The present study shows that out of total 472 patients, 263 (55.7%) were aggressive and rest 209 (44.3%) were non-aggressive. Among the aggressive patients, 53.6% (N=253) exhibited verbal aggression, 36.4% (N=172) exhibited aggression towards objects, 32.2% (N=152) exhibited aggression towards others, and 16.1% (N=76) exhibited aggression towards self (more than one form of aggressive behaviour is noted).

Family history of mental illness: In the study sample, we found 20.3% (N=96) patients with family history positive for mental illness; out of which, 15% (N=71) patients were positive for first degree relatives. On evaluation of type of mental disorder among 20.3% (N=96) patients, we found 17.4% (N=82) patients with psychotic type of mental illness in their family. We found significant association between aggression and family history of mental illness ($p=0.016$). Verbal assaults and assault against objects were significantly associated with this variable ($p=0.016$ and $p=0.017$). No significant association was found between family history of mental disorder and assault against other and self-assault.

Family history of substance abuse: In our study population, we found 12.9% (N=61) patients with family history of substance abuse and 87.1% (N=411) patients without family history of substance abuse. Seventy seven per cent (N=47) patients with family history of substance abuse turned aggressive which is highly significant ($p=0.001$), though the majority of the admitted patients were without family history of substance abuse. Family history of substance abuse is significantly associated with verbal

aggression and assault towards objects ($p=0.010$ and $p=0.005$).

Table 1. Socio-demographic profile of study population

Gender	
Male	62.7% (N=296)
Female	37.3% (N=176)
Age	
18-30 years	57.2% (N=271)
31-40 years	24.3% (N=115)
41-50 years	13.9% (N=66)
51-60 years	4.6% (N=22)
Marital status	
Married	51.1% (N=241)
Unmarried	47.0% (N=222)
Divorced/Widowed/Separated	1.9% (N=9)
Religion	
Hindu	78.8% (N=372)
Non-Hindu	21.2% (N=100)
Locality	
Urban	32.0% (N=151)
Rural	68.0% (N=321)
Type of family	
Nuclear	45.6% (N=215)
Joint	53.6% (N=253)
Extended	0.8% (N=4)
Level of education	
School (up to class X)	79.2% (N=374)
College (class XII onward)	15.7% (N=74)
Professional	1.3% (N=6)
Illiterate	3.8% (N=18)
Occupation	
Unemployed	41.1% (N=194)
Self-employed	32.8% (N=155)
Employed	26.1% (N=123)

N=number

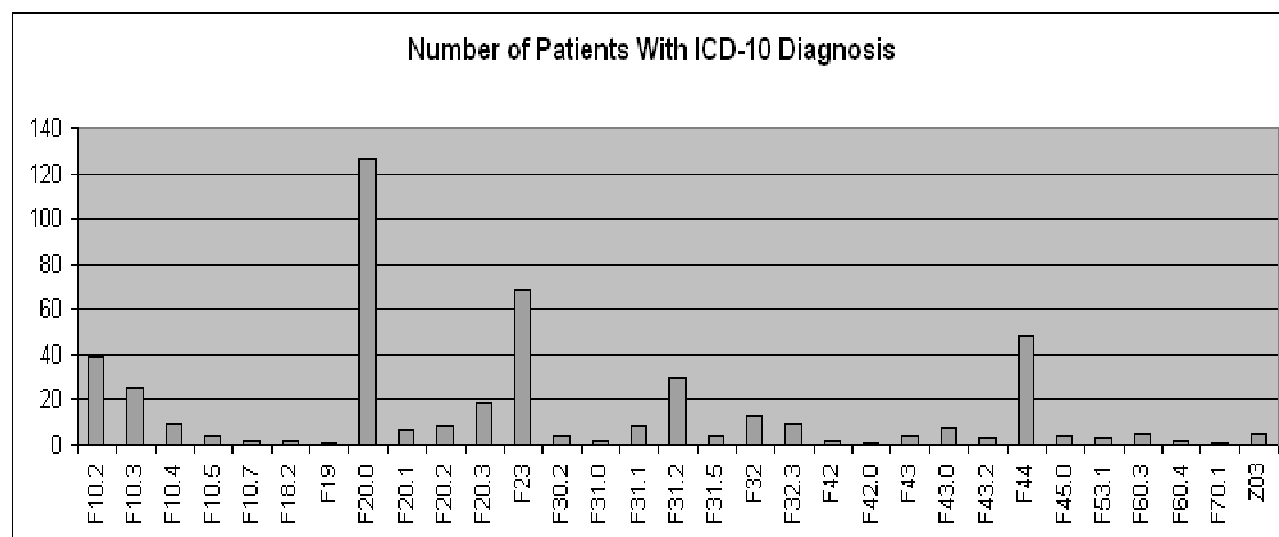
Past psychiatric history: In our study sample, 37.3% (N=176) patients had past history of mental disorder and 62.7% (N=296) patients were without past history of mental disorder. We found 62% (N=109) aggressive patients with past history of mental disorder and 38% (N=67) non-aggressive patients with past history of mental disorder. We found statistically significant association between aggression and positive past history of mental disorder ($p=0.036$). Under the individual group, verbal assault was significantly associated with past history of mental disorder ($p=0.016$). No significant association was found in other groups like assault against objects, assault against others, and assault against self. Past history of violence was having significant association with current aggressive behaviour in the aggressive patients as compared to non-aggressive patients ($p=0.000$).

Substance use: Out of 472 patients, only six patients had other forms of drug dependence other than alcohol related disorders. Considering the very low number of cases of non-alcohol related patients, those six patients were excluded from the study population. The statistical comparisons were made on the remaining 83 patients, who had some alcohol related disorders.

Of total 83 patients, 61.45% (N=51) had shown some form of violence. Data were collected on four different types of violence, which were viz., verbal assault, assault on objects, assault on others, and self-assault. Of these, maximum patients had shown verbal assault and a very few had self-assault. The percentages are verbal assault 60.24% (N=50), object assault 28.9% (N=24), assault to others 32.53% (N=27), and 2.41% (N=2) person showed assault to self (Table 2).

Of the patients who showed any type violence, 40% (N=20) showed only verbal assault. All other types of violence were present only in those who had shown verbal assault. Forty eight per cent (N=24) of those who showed verbal assault had shown assault on objects, and 54%

Figure 1 Number of patients with ICD-10 diagnosis.



(N=27) of those showing verbal assault had shown assault on others. Thus some form of verbal assault could be considered as predictor for other type of assault.

Table 2. Pattern of aggressive behaviour exhibited by the patients with substance related disorders

Types of aggression	% (N=83)
Verbal aggression	60.24% (N=50)
Object aggression	28.9% (N=24)
Aggression toward others	32.53% (N=27)
Aggression toward self	2.41% (N=2)

Comorbid substance abuse: In our study population, we found that 37.1% (N=175) patients had history of comorbid substance abuse while 62.9% (N=297) patients were without history of substance abuse. Out of 175 patients, 73% patients who had history of substance abuse turned aggressive. Statistically significant association was found between aggressive behaviour and substance abuse. Patients showing verbal aggression, assault against objects, and assault against others were significantly associated with comorbid substance abuse ($p=0.000$, $p=0.001$, and $p=0.000$).

Discussion

The present study was carried out in the patients admitted in an open type of acute psychiatry ward of a university hospital. In total, 472 patients were included in the study from September 2007 to August 2008. The prevalence rate of aggression in the study population was 55.7% (N=263). It also shows that more than one form of aggressive behaviour was exhibited by the patients. Among the aggressive patients, 53.6% (N=253) exhibited verbal aggression, 36.4% (N=172) exhibited aggression towards objects, 32.2% (N=152) exhibited aggression towards others, and 16.1% (N=76) exhibited aggression towards self (more than one form of aggressive behaviour is noted). This finding is in agreement with the finding of other studies.[7,17] However, in few studies, significantly lower rates of violent episode were observed.[6,18-20]

In our study, we found several factors which are significantly associated with aggressive behaviour that can play an important role for the predictability of aggressive behaviour. We found significant association between aggression and family history of mental illness ($p=0.016$). Parental psychiatric illnesses are commonly associated with an aversive and stressful home environment that combined with parental dysfunction, promotes the child's disengagement from the family.[21] Pedigree studies show that persons with family histories of mental disorders are more susceptible to mental disorders and engage in more aggressive behaviour than those without such histories.

Ghosh *et al.*[22] demonstrated that bipolar disorder patient had more positive family history of mood disorder. Research involving monozygotic twins indicates a hereditary component to aggressive behaviour.

In this study, family history of substance abuse is significantly associated with verbal aggression and assault towards objects ($p=0.010$ and $p=0.005$). Seventy seven per cent (N=47) patients with family history of substance abuse turned aggressive which is highly significant ($p=0.001$). This finding could be explained on the basis that substance abuse is established cause for aggressive behaviour.[23-27] This often led to disinhibition and impaired judgement. Under the influence of substance, person may abuse the family member both verbally or physically. Home environment becomes unfriendly when a member in a family is using the substance chronically.

Past history of psychiatric illness gives the idea of episodic nature of illness and compliance to the medication. This may be important in patients who are relatively resistant to neuroleptics. We found statistically significant association between aggression and positive past history of mental disorder ($p=0.036$). The findings of our study tally well with most of the earlier studies.[6,28,29]

In our sample, the most frequent substance of dependence was alcohol, while very little number of patients was found in other categories of substance use. Out of 83 patients who had some alcohol related disorders, 61.45% (N=51) had shown some form of violence. It has been observed in most of the studies that drugs and alcohol are strongly associated with violent behaviour.[9,30,31] Alcoholism as a primary disorder can result in violence.[1] This is often the result of disinhibition, particularly in the early phase of intoxication, as well as emotional lability and impaired judgement at a later stage of intoxication. Patients dependent on more than one substance were significantly more aggressive than other categories of drug users. Such patients undergo a complicated withdrawal process, and may experience a range of physical and psychological withdrawal symptoms. For example, the adrenergic discharge associated with opiate withdrawal may lead to irritability and thus to aggression.[27]

Dual diagnosis of a severe mental illness and a substance misuse disorder has a highly significant association with aggression.[1,32-34] There is evidence that the type of drug used may be important, with stimulant drugs such as cocaine and amphetamine increasing the risk of violence.[34] It is possible that once comorbid substance misuse, personality disorder, or other issues were controlled, the unique contribution of psychosis to violence might have diminished dramatically.[33] Co-occurrence presents challenges for diagnosis as well as for optimal patient management.[35] While in other studies, it has been shown

that substance misuse/dependence was not associated with aggressive behaviour after controlling for conduct problems prior to age 15 years.[36,37] Similarly, among the women in the UK700 study, substance misuse was not associated with violence towards others.[38]

Mental health care provider needs to assess risk carefully, and pay particular attention to these groups of patients who may need increased support in order to prevent such aggressive incidents. This study provides important information regarding patients who are at high risk for aggressive behaviours. Patient characteristics and parental characteristics can be utilised as efficient screening method for violence proneness.

Limitations

Apparent limitations to our study are the retrospective nature of the data collection and the reliance on the informants. The latter is likely to have led to an overestimation of the number of aggressive incidents, or underestimation particularly those not involving physical aggression. We did not include a comparison group composed of healthy adults living in the same neighbourhood as the patients. In our setup, it is almost impossible to recruit a comparison sample that is representative of the general population as to aggressive behaviour and criminality. This is because the most frequent offenders – young men and women with a childhood history of conduct disorder, adult antisocial personality disorder, and substance misuse – are unlikely to volunteer to participate in a research study. The presentation of population in our study was from rural area mostly and majority of them of lower socioeconomic status, so findings may not be possible to be generalised in the population of other areas. So, further studies are required to corroborate it across the various cultures in India. The study population consisted only of admitted indoor patients. There is a possibility that the population is representative of only more severe cases requiring admission. It also may explain absence or small number of certain diagnostic categories which generally does not require indoor admission.

Recommendation for the future research

The findings of this study need to be corroborated and expanded in future studies which should be a prospective study and which draws samples from the community and/or from the outpatient attendance in an Indian setup, as there is scarcity of such studies in our country.

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References

1. Tripathi MN, Phookun HR, Yadav JS, Srivastava AS, Talukdar U. Predictors of aggressive behaviours in drug de-addiction centre. *Delhi Psychiatry Journal*. 2012;15:79-84.
2. Scheffer R. Addressing stigma: increasing public understanding of mental illness. The Standing Committee on Social Affairs, Science and Technology; 2003.
3. Calcedo-Barba AL, Calcedo-Ordóñez A. Violence and paranoid schizophrenia. *Int J Law Psychiatry*. 1994;17:253-63.
4. Krakowski MI, Czobor P. Clinical symptoms, neurological impairment, and prediction of violence in psychiatric inpatients. *Hosp Community Psychiatry*. 1994;45:700-5.
5. Morrison EF. A coercive interactional style as an antecedent to aggression in psychiatric patients. *Res Nurs Health*. 1992;15:421-31.
6. Noble P, Rodger S. Violence by psychiatric in-patients. *Br J Psychiatry*. 1989;155:384-90.
7. James DV, Fineberg NA, Shah AK, Priest RG. An increase in violence on an acute psychiatric ward. A study of associated factors. *Br J Psychiatry*. 1990;156:846-52.
8. Eastley R, Mian I. Physical assaults by psychogeriatric patients: patient characteristics and implications for placement. *Int J Geriatr Psychiatry*. 1993;8:515-20.
9. Palmstierna T, Wistedt B. Risk factors for aggressive behaviour are of limited value in predicting the violent behaviour of acute involuntarily admitted patients. *Acta Psychiatr Scand*. 1990;81:152-5.
10. Miller RJ, Zadolinnyj K, Hafner RJ. Profiles and predictors of assaultiveness for different psychiatric ward populations. *Am J Psychiatry*. 1993;150:1368-73.
11. Tarter RE, Kirisci L, Vanyukov M, Cornelius J, Pajer K, Shoal GD, *et al*. Predicting adolescent violence: impact of family history, substance use, psychiatric history, and social adjustment. *Am J Psychiatry*. 2002;159:1541-7.
12. Beck A, Kline S, Greenfield L. Survey of youth in custody: special report. Washington, DC: Department of Justice, Bureau of Justice Statistics; 1988.
13. MacArthur Foundation. The MacArthur violence risk assessment study: executive summary. 2001.
14. Scott H, Johnson S, Menezes P, Thornicroft G, Marshall J, Bindman J, *et al*. Substance misuse and risk of aggression and offending among the severely mentally ill. *Br J Psychiatry*. 1998;172:345-50.
15. World Health Organization. International Statistical Classification of Diseases and Related Health Problems, tenth revision (ICD-10): Clinical Descriptions and Diagnostic guidelines. Geneva: World Health Organization; 1992.
16. Coccaro EF, Harvey PD, Kupsaw-Lawrence E, Herbert JL, Bernstein DP. Development of neuropharmacologically based behavioral assessments of impulsive aggressive behavior. *J Neuropsychiatry Clin Neurosci*. 1991;3:S44-51.
17. Rabinowitz J, Mark M. Risk factors for violence among long-stay psychiatric patients: national study. *Acta Psychiatr Scand*. 1999;99:341-7.

18. Tardiff K, Sweillam A. Assaultive behavior among chronic inpatients. *Am J Psychiatry*. 1982;139:212-5.
19. Fottrell E. A study of violent behaviour among patients in psychiatric hospitals. *Br J Psychiatry*. 1980;136:216-21.
20. Pearson M, Wilmot E, Padi M. A study of violent behaviour among in-patients in a psychiatric hospital. *Br J Psychiatry*. 1986;149:232-5.
21. Tarter RE, Kirisci L, Vanyukov M, Cornelius J, Pajer K, Shoal GD, *et al*. Predicting adolescent violence: impact of family history, substance use, psychiatric history, and social adjustment. *Am J Psychiatry*. 2002;159:1541-7.
22. Ghosh S, Das S, Tripathi MN, Yadav JS. A clinical study on recurrent mania: relation with body built and family history of mood disorder. *Indian Journal of Psychosocial*. 2011;1(2):37-41.
23. Scarpa A, Fikretoglu D, Bowser F, Hurley JD, Pappert CA, Romero Nancy *et al*. Community violence exposure in university students: a replication and extension. *J Interpers Violence*. 2002;17:253-72.
24. Nijman HLI, Muris P, Merckelbach HLGJ, Palmstierna T, Wistedt B, Vos AM *et al*. The staff observation aggression scale-revised (SOAS-R). *Aggr Behav*. 1999;25:197-209.
25. Dietz PE, Rada RT. Battery incidents and batterers in a maximum security hospital. *Arch Gen Psychiatry*. 1982;39:31-4.
26. Tardiff K. A survey of assaults by chronic patients in a state hospital system. In: Lion JF, Reid WH, editors. *Assaults within psychiatric facilities*. New York: Grune & Stratton; 1983.
27. Rajesh GS, Day E. Aggression in drug-dependent in-patients. *Psychiatrist*. 2005;29:141-3.
28. Hodgins S, Alderton J, Cree A, Aboud A, Mak T. Aggressive behaviour, victimization and crime among severely mentally ill patients requiring hospitalisation. *Br J Psychiatry*. 2007;191:343-50.
29. Grassi L, Peron L, Marangoni C, Zanchi P, Vanni A. Characteristics of violent behaviour in acute psychiatric in-patients: a 5-year Italian study. *Acta Psychiatr Scand*. 2001;104:273-9.
30. Ruben I, Wolkon G, Yamamoto J. Physical attacks on psychiatric residents by patients. *J Nerv Ment Dis*. 1980;168:243-5.
31. Hodgkinson PE, McIvor L, Phillips M. Patient assaults on staff in a psychiatric hospital: a two-year retrospective study. *Med Sci Law*. 1985;25:288-94.
32. Monahan J, Steadman H, Silver E, Appelbaum P, Robbins P, Mulvey E, *et al*. *Rethinking risk assessment: The Macarthur Study of Mental Disorder and Violence*. New York: Oxford University Press; 2001.
33. Hiday VA. Putting community risk in perspective: a look at correlations, causes and controls. *Int J Law Psychiatry*. 2006;29:316-31.
34. Miles H, Johnson S, Amponsah-Afuwape S, Finch E, Leese M, Thornicroft G. Characteristics of subgroups of individuals with psychotic illness and a comorbid substance use disorder. *Psychiatr Serv*. 2003;54:554-61.
35. Borgohain L, Phookun HR. Psychiatric comorbidity with substance abuse: a clinical study. *Dysphrenia*. 2013;4:59-70.
36. Hodgins S, Tiihonen J, Ross D. The consequences of Conduct Disorder for males who develop schizophrenia: associations with criminality, aggressive behavior, substance use, and psychiatric services. *Schizophr Res*. 2005;78:323-35.
37. Swanson JW, Swartz MS, Van Dorn RA, Elbogen EB, Wagner HR, Rosenheck RA, *et al*. A national study of violent behavior in persons with schizophrenia. *Arch Gen Psychiatry*. 2006;63:490-9.
38. Dean K, Walsh E, Moran P, Tyrer P, Creed F, Byford S, *et al*. Violence in women with psychosis in the community: prospective study. *Br J Psychiatry*. 2006;188:264-70.