RESEARCH

A study of medication nonadherence in schizophrenia

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Abstract

Background: Nonadherence is a problem in schizophrenia. This study aimed to find out the demographic and clinical variables affecting medication adherence in schizophrenia and to find out the relationship between severity of illness and medication adherence in schizophrenia.

Material and methods: It was a cross-sectional study where subjects were assessed for adherence in a single contact. Tools used were proforma for demographic data, the tenth revision of the Internal Statistical Classification of Diseases and Related Health Problems (ICD – 10), brief psychiatric rating scale (BPRS) and medication adherence rating scale (MARS).

Results: In our sample the mean age of the participants was 34.04 (standard deviation, SD: 9.96) years. Rate of nonadherence in our study was 37%. The findings showed no significant association of adherence to religion, educational level, occupation, family income, type of family and family history. Maximum patients were diagnosed as having paranoid schizophrenia 38 (82.61%). It was found that adherence correlated negatively with BPRS total score. No significant difference was observed between use of typical and atypical antipsychotic on adherence.

Conclusion: Not visiting a psychiatrist might be viewed as just another aspect of nonadherence which may not have been highlighted in our single contact hospital based study.

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Introduction

The term adherence has been defined as the extent to which a person's behaviour coincides with medical or health advice.[1] The adherence project of World Health Organization (WHO)[2] has adopted the following definitions of adherence to long-term therapy: the extent to which a person's behaviour – taking medication, following a diet and/or executing life style changes – corresponds with agreed recommendation from a health care provider.

Reluctance to comply with prescriptions seems to be a human trait and nonadherence is a ubiquitous problem in medicine,[3] some aspects of schizophrenia might make it especially difficult for patients to adhere to treatment. First, schizophrenia is an illness in which insight is probably more likely to be impaired than is the case with other illnesses. Second, disorganised behaviour and cognitive disturbances are additional symptoms of schizophrenia that interfere with regular intake of medication.[4-6]

Aims and objectives

1. To find out the demographic and clinical variables affecting medication adherence in schizophrenia

2. To find out the relationship between severity of illness and medication adherence in schizophrenia

Methods and materials

Place of study: Department of Psychiatry of Silchar Medical College Hospital (SMCH), Silchar, Assam, India.

Sample: Forty six adult patients of schizophrenia attending Psychiatry outpatient department (OPD) of SMCH for follow up were selected randomly.

Sample inclusion criteria: Adult males and females in the age range of 18-60 years fulfilling criteria for schizophrenia according to the tenth revision of the Internal Statistical Classification of Diseases and Related Health Problems (ICD-10),[7] and reporting follow up at Psychiatry OPD of SMCH, who have been on antipsychotic medications for at least a month.

Study design: It was a cross-sectional study where subjects were assessed for adherence in a single contact.

Tools:

1. Proforma prepared in the Department of Psychiatry of SMCH for demograhic data.

2. The ICD-10.[7]

3. Brief psychiatric rating scale (BPRS) and medication adherence rating scale (MARS).[8]

4. Analysis techniques – Demographic and clinical variables were presented by descriptive statistics.

Contingency tables were analysed by Fisher's exact and chi-square tests. Pearson correlation was used to see the correlation between medication adherence and severity of illness.

Methodology: Adult patients with schizophrenia of both sexes (18 to 60 years) were approached. After obtaining informed consent, demographic data and illness details were recorded on a specially designed proforma. Then above tools were applied on these patients.

Medication adherence rating scale:[8] This scale is based on two already existing self-report measures of compliance. The first is the Drug Attitude Inventory (DAI)[9] and the second is the Medication Adherence Questionnaire (MAQ).[10] These compliance measures have been combined to produce a compliance scale. The MARS consists of ten items which require yes/no responses. The first four items are based on the MAQ, and are scored, no = one and yes = zero. The remaining items are from the DAI and are coded as follows: Q6, Q9, Q10, no = one and yes = zero; Q5, Q7, Q8, no = zero and yes = one. A total score will then reflect a greater degree of compliance if it is high and noncompliance if it is low. Medication adherence was rated by using MARS which had median score of five which was taken as cut off for good adherence with those scoring four or below were considered as having poor adherence.

Table 1. Demographic variables

Age (in years)
Mean 34.04
Median 35
Standard deviation (SD) 9.96
Minimum: 18
Maximum: 60
Sex, n (%)
Men 32 (69.6)
Women 14 (30.4)
Religion, n (%)
Hindu 31 (67)
Muslim 15 (33)
Locality, n (%)
Rural 33 (72)
Urban 13 (28)
Occupation, n (%)
Unemployed 11 (23.9)
Student 1 (2.1)
Housewife 13 (28.4)
Semiskilled/skilled 12 (26.09)
Professional 6 (13.04)
Self-employed 3 (6.52)
Socioeconomic status, n (%)
Low 19 (41.3)
Lower middle 18 (39.1)
Middle 7 (15.2)
Upper middle 1 (2.17)
High 1 (2.17)
Education, n (%)
Illiterate 5 (10.87)
Primary 23 (50)
Secondary 13 (28.36)
Graduate 4 (8.7)
Post graduate 1 (2.17)

Table 2. Clinical variables

Diagnosis, n (%)
Paranoid: 38 (82.61)
Hebephrenic: 2 (4.35)
Catatonic: 1 (2.17)
Undifferentiated: 5 (10.57)
Mode of onset, n (%)
Abrupt: 0 (0)
Acute: 9 (20)
Insidious: 37 (80)
Duration of illness, n (%)
Less than (or equal to) two years: 24 (52)
More than two years: 22 (48)
Family history, n (%)
Psychiatric illness: 15 (32.6)
Medical illness: 3 (6.5)
None: 28 (60.9)
Substance abuse, n (%)
Present: 10 (22)
Absent: 36 (78)
Details of medication, n (%)
Not available: 6 (13.04)
Atypical antipsychotics: 10 (21.47)
Typical antipsychotics: 1 (2.17)
Antipsychotics + other drugs: 29 (63.04)
Route of administration, n (%)
Oral: 42 (91)
Oral + injectable: 4 (9%)
Cost of medication, n (%)
< Rs. 500: 32 (69.57)
Rs. 500- 1000: 12 (26.09)
> Rs. 1000: 2 (4.35)
Supervised or not, n (%)
Yes: 24 (52)
No: 22 (48)
Regularity of follow up, n (%)
Regular: 18 (39)
Irregular: 28 (61)

Results

Demographic variables are presented in table 1. Clinical variables are presented in table 2. Relation of adherence to demographic variables is shown in table 3. Relation of adherence to clinical variables is shown in table 4. Pearson correlation of medication adherence (MARS) with severity of illness (BPRS) was found to be -0.4285 with a 2-tailed siginifaicance of 0.0030 for N=46.

Discussion

In our sample the mean age of the participants was 34.04 (standard deviation, SD: 9.96) years. This is comparable to other studies where it has been found to be 27 (SD ± 7.1) years[11] to 35 (SD ± 9.5) years.[12] Rate of nonadherence in our study was 37%. Rates of nonadherence in psychotic disorders have been reported to vary between 11% to 80%.[13-16] The findings showed no significant association of adherence to religion, educational level, occupation, family income, type of family and family history. These findings are similar to some

Table 3. Adherence and demographic variables

Demographic variables	Good adherence	Poor adherence	P value[ɣ]
Sex			
Men	20	12	1.0000
Women	9	5	
Religion			
Hindu	20	11	1.0000
Islam	9	6	
Locality			
Rural	19	14	0.3150
Urban	10	3	
Occupation			
Unemployed	5	6	0.4176
Student/Housewife	10	4	
Skilled/semiskilled	7	5	
Professional/Self-employed	7	2	
Socioeconomic status			
Low	12	7	0.9610
Lower middle	11	7	
Middle/Upper middle/High	6	3	
Education			
Illiterate	2	3	
Primary	13	10	0.1982
Secondary/Graduate	14	4	
Post graduate			

[ɣ]Fisher's exact test/Chi-square test, P-value

Table 4. Adherence and clinical variables

Clinical variables	Good adherence	Poor Adherence	P value[ɣ]
Diagnosis			
Paranoid	26	12	0.1073
Hebephrenic/Catatonic	2	1	
Undifferentiated	1	4	
Mode of onset			
Acute	5	4	0.7068
Insidious	24	13	
Duration of illness			
Less than (or equal to) two years	16	8	0.7610
More than two years	13	9	
Family history	9	6	0.9536
Psychiatric illness	2	1	
Medical illness	18	10	
None			
Substance abuse	7	3	0.7227
Present	22	14	
Absent			
Details of medication	9	2	0.2910
Antipsychotics	16	13	
Antipsychotics + other drugs	4	2	
Not available			
Route of administration	26	3	1.000
Oral	3	1	
Oral + injectable	18	14	0.1949
Cost of medication	11	3	
< Rs. 500			
≥ Rs.500	16	13	0.7610
Supervised or not	8	9	
Yes			
No	16	2	0.0047**
Regularity of follow up	13	15	
Regular			
Irregular			

[ɣ]Fisher's exact test/Chi-square test, P-value
**significant P-value

earlier studies. Blackwell[17] opined that demographic factors are the least rewarding of the predictors of compliance.

Maximum patients were diagnosed as having paranoid schizophrenia 38 (82.61%), while five (10.57%) had undifferentiated schizophrenia and two (4.35%) had hebephrenic schizophrenia and one (2.17%) had catatonic schizophrenia, similar to earlier studies such as that of Robinson *et al*.[18] where out of a sample of 81, 61 had paranoid schizophrenia, 13 had undifferentiated schizophrenia, five had disorganised schizophrenia, two catatonic schizophrenia. It was found that adherence correlated negatively with BPRS total score. Some other studies also suggested that severity of psychopathology can influence treatment adherence.[4-6] A longer duration of illness has not been found to be a factor in adherence.[19] In our study as well, duration of illness has not been found to have any significant relation to adherence.

No significant difference was observed between use of typical and atypical antipsychotic on adherence which is in keeping with other studies.[5,20-22] Significant difference in adherence was seen in patients who were regular in follow up in comparison to those who were not (p value was 0.004). The adherence to medication was better in those receiving both oral and depot than those receiving only oral medications. Similar trends were noted in a study by Weiden *et al*.[23] Baruah and Reddemma[24] found that educative intervention on drug compliance is related with better outcome in compliance of patients with schizophrenia.

Limitations

1. The sample was size was small.

2. Any measure of self-reported compliance such as MARS which was used in our study overestimates compliance by approximately 30%.

3. As our study was done in a tertiary care set up it might not represent the actual picture prevailing in the community. Not visiting a psychiatrist might be viewed as just another aspect of nonadherence which may not have been highlighted in our single contact hospital based study.

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