Original Article

Attitudes toward Medication and Reasons for Non-Compliance in Patients with Schizophrenia

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ABSTRACT

Background: Non-compliance for the medication is an important area of concern in schizophrenia as it contributes to relapse and re-hospitalization of the patients. One of the ways to improve the drug compliance is to know crucial factors responsible for poor drug compliance and hence that proper strategies may be planned to improve patient's drug compliance. **Aim:** The aim of the following study is to find out the attitudes of patients toward medication and reasons for drug non-compliance in schizophrenia and its association with clinical and socio-demographic variables. **Materials and Methods:** The study was conducted on follow-up patients with schizophrenia for the duration of 5 months. Their socio-demographic details were noted and illness related variables were evaluated using Positive and Negative Syndrome scale (PANSS). Patient's attitudes toward medication and the reasons for treatment non-compliance were assessed using the standardized tools, which consist of Drug Attitude Inventory-10 scale and Rating of Medication Influences scale respectively. **Results:** Nearly 41.9% of our study sample were non-compliant to medication. A significant association has been found between non-compliance and younger age group, unemployment, early age of onset, high positive PANSS score and poorer insight into the illness. The significant reasons for non-compliance in our study were Denial of illness, financial burden, less access to treatment facilities, Side-effects of the medication, Feeling that the medication was unnecessary and Substance abuse. **Conclusions:** Findings suggest that there is a need to provide adequate information about mental illness and medications prescribed, to enhance medication compliance and to develop community mental health care facilities.

Key words: *Attitudes, non-compliance, schizophrenia*

INTRODUCTION

Compliance broadly means the extent to which a person's behavior, in terms of taking medications, following diets and executing life-style changes, visiting for follow-up etc., coincides with medical and health advice.[1] Compliance to medication usually means "the extent to which the patient takes the medication as prescribed." Rosack explained the phenomenon of adherence to medication in terms of refill rate. Refill rate is the proportion of days of proper adherence to prescribed medication by the patient calculated in relation to the total days of advice. Patients who had only 50% of their expected refill rate were termed "non-adherent." Those who filled prescriptions between 50% and 80% of the expected refill rate were termed "partially adherent." Those who filled their prescriptions at more than 110% of the expected rate were termed "excess fillers."[2]

Non-adherence to pharmaceutical therapy is common when patients are required to take medications on a long-term basis and it has been found to be particularly

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prevalent in the case of schizophrenic disorders, which require continued use of a drug for daily functioning.[3] Lacro *et al.*[4] in their study have reported a median non-adherence rate of 47%. They found that the most consistently reported and potentially modifiable risk factors for non-adherence were patient-related factors (poor insight into having a mental illness, negative attitude or subjective response toward antipsychotic medication and substance abuse) and environment-related factors (poor therapeutic alliance). These findings are consistent with findings from the recent Clinical Antipsychotic Trials of Intervention Effectiveness in which 75% of patients stopped phase I antipsychotic medication within 18 months. The most common reason for stopping was simply the patient's decision to discontinue, not lack of efficacy or side-effects.[5]

In studies done in India, Khanna[6] in their study have reported that 31% of the subjects with schizophrenia do not keep their appointment for detailed evaluation after initial evaluation in the walk-in clinic. The authors also reported that 32% of the subjects stop attending the clinic after initial detailed work-up and diagnostic clarification. In another interesting study Srinivasan and Thara[7] reported that history of non-compliance with oral medication was seen in about 58% of patients during the course of their illness.

Improving medication compliance in persons with mentally ill holds the potential for reducing morbidity and suffering of patients and their families, in addition to decreasing the cost of re-hospitalization.[8] One of the ways to improve drug compliance is to know about the attitudes and reasons responsible for poor drug compliance and hence that appropriate management strategies may be planned to improve it. With this background, our study attempted to identify factors associated with non-adherence to scheduled out-patient visits at a major psychiatric teaching hospital.

Aim

To find out the attitudes of patients toward medication and reasons for drug non-compliance in schizophrenia and its association with clinical and socio-demographic variables.

MATERIALS AND METHODS

The present study is conducted at the out-patient Department of Psychiatry, Mamata Medical College and General Hospital, Khammam from 1st January to 31st May of 2013. The study sample consists of consecutive follow-up patients attending the out-patient services in our hospital for schizophrenia. After taking informed verbal consent, all patients were systematically interviewed along with the attendant and the socio-demographic details were noted. Patient was labeled as non-compliant if he was non-adherent as per Rosack's criterion.[2] The diagnosis of schizophrenia was reviewed in accordance to International Classification of Diseases-10 research diagnostic criteria.[9] Positive and Negative Syndrome scale (PANSS)[10] was used to assess the severity of the illness. Subjective reasons of medication compliance/non-compliance were assessed using 20 item Rating of Medication Influence (ROMI) scale.[11] The attitude toward antipsychotic medication was assessed using Drug Attitude Inventory-10 (DAI-10).[12] The data was statistically analyzed using Statistical product and service solutions (SPSS-16) version.

Inclusion criteria
- Patients in the age group of 15-60 years.
- Patients who were physically fit to answer the questions.
- Patients who gave consent for the study.

Exclusion criteria
- Patients who were on medication for <6 months.
- Patients who were in acute psychotic state.
- Patients who require urgent attention for medical problems.
- Patients without reliable informants.

RESULTS

Out of the total 115 patients initially considered for the study 10 were excluded based on the fixed exclusion criteria. The final study sample was 105 (100%) of which 61 (58.1%) were compliant and 44 (41.9%) were non-compliant to the medication [Table 1]. There is a significant association between lower mean age (32.36 ± 7.59), unemployment (77.3%), lower mean age at the onset of illness (26.84 ± 5.5), higher mean scores (98.5 ± 8.0) on PANSS and higher mean scores (6.05 ± 0.74) of G12 domain of PANSS indicating poorer insight in to illness and non-compliance toward antipsychotics [Tables 2 and 3].

The mean scores of positive domain (2.02 ± 1.9) among the patients belonging to non-compliant group is lower when compared with that of the compliant group (7.98 ± 1.9) and also lower mean scores (5.36 ± 1.7)

Table 1: Study sample

Variable	Number
Total patients initially considered	115
Patients excluded	10
Final study sample	105
Compliant	61 (58.1%)
Noncompliant	44 (41.9%)

of the overall attitude toward medication among the non-compliant group indicates more positive overall attitude toward medication in the patients belonging to compliant group [Table 4]. The most significant reason for compliance is perceived daily benefit by the patients and denial of illness by the patient is most common reason for non-compliance. Other significant reasons associated with compliance and noncompliance toward antipsychotic medications in our study is presented in Tables 5 and 6.

DISCUSSION

This study is an attempt to find out the rate of non-compliance and the attitudes and reasons for noncompliance in patients with schizophrenia. Available literatures provide a non-compliance rate of (12-60%). [7,13] In the present study, non compliance is 41.9%. The mean age (32.36 ± 7.59) of patients who were non-compliant is lower than that of mean age of patients who were compliant (37.69 ± 11.59). Among the socio-demographic variables, the association between age and non-compliance was found to be statistically significant ($P = 0.01$). This finding is in accordance with the earlier studies by Klinkenberg and Calsyn[14] and Carpenter *et al.*[15] who observed a relatively higher non-adherence in the young population. This may be because, with the increase in age, patients accumulate experience with their psychotic illness and they learn that there is a connection between relapse and interruption of neuroleptic drug intake and therefore they adhere to the prescribed medication. There is no much difference in compliance among males and females between the two groups. This is concurrent with the previous findings Diaz *et al.*[16] Better compliance in the employed population can be because patients with schizophrenia have less chances of getting employed, which leads to deterioration of the financial status of the family, which makes them more prone to quit the course of medication. This difference was found to be statistically significant ($P = 0.03$). This is similar to the finding of Atwood and Beck[17] who, in a compilation analysis of 86 studies involving 23,796 patients of psychoses had found a positive association between unemployment and non-adherence, which indicates a financially poor affordable capacity in this population.

The mean age at the onset of illness (26.84 ± 5.5) in non-compliant group is less than that of compliant group (31.02 ± 11.48). This difference was found to be statistically significant ($P = 0.02$). One interpretation of this could be that early onset of psychosis needs prolonged duration of medication which would lead to the increased number of side effects leading to non-compliance. The other contributing factors could be burnt out syndrome in the caregivers and increased

Table 2: Socio demographic variables

Variable	Compliant	Noncompliant	*P* value
Age	37.69±11.59	32.36±7.59	0.01
Sex (%)			
Male	40 (65.6)	29 (65.9)	0.43
Female	21 (34.4)	15 (34.1)	
Education (%)			
Illiterate	16 (26.3)	19 (43.2)	0.34
Primary	12 (19.7)	7 (15.9)	
Secondary	14 (22.9)	7 (15.9)	
Graduate	19 (31.1)	11 (25)	
Occupation (%)			
Employed	29 (47.5)	10 (22.7)	0.03
Unemployed	32 (52.5)	34 (77.3)	
Family income (monthly) (%)			
Rs. <5000	35 (57.4)	33 (75)	0.6
Rs. >5000	26 (42.6)	11 (25)	
Type of family			
Nuclear	58 (95.1)	30 (68.2)	0.45
Joint	6 (4.9)	14 (31.8)	
Marital (%)			
Married	43 (70.5)	27 (61.4)	0.62
Single/divorced	18 (29.5)	17 (38.6)	

Table 3: Clinical variables

Variables	Compliant	Non-compliant	*P* value
Age at onset (years)	31.02±11.48	26.84±5.5	0.02
PANSS	75.57±12.08	98.5±8.0	<0.01
Insight (G12)	2.25±1.075	6.05±0.74	<0.01

PANSS – Positive and negative syndrome scale

Table 4: Attitudes of patient towards medication

DAI	Compliant	Non-compliant
Positive domain	7.98±1.9	2.02±1.9
Negative domain	2.36±0.6	7.64±0.6
Total score	6.39±2.871	5.36±1.7

$\chi^2 - 27.01$; *P* – 0.03; DAI – Drug attitude inventory

Table 5: Reasons for compliance

Reasons	Compliant (%)			Non-compliant (%)			*P* value
	None	Mild	Strong	None	Mild	Strong	
Perceived daily benefit	0	16.3	83.7	47.7	47.7	4.6	<0.01
Family belief	6.6	18	75.4	20.4	68.2	11.4	<0.01
Relapse prevention	13.2	32.8	54.1	61.4	38.6	0	<0.01
Pressure/force	6.5	27.9	65.6	13.7	63.6	22.7	<0.01

Table 6: Reasons for non-compliance

Reasons	Compliant (%)			Non-compliant (%)			*P* value
	None	Mild	Strong	None	Mild	Strong	
Denail of illness	42.6	50.8	6.6	2.3	27.3	70.4	<0.001
Financial obstacles	75.4	18	6.6	15.9	29.6	54.5	<0.001
Medication currently unnecessary	80.3	13.1	6.6	6.8	47.7	45.5	<0.001
Access to treatment problems	96.7	3.3	0	34.1	34.1	31.9	<0.001
Distressed by side effects	90.2	8.2	1.6	47.7	31.8	20.5	<0.001
Substance abuse	96.7	0	3.3	65.9	20.5	13.6	<0.001

financial burden with prolonged duration of illness in patients with early onset of psychosis. Our findings are similar to the findings of Balikci *et al.*[18] who, in a 2 year prospective study had found out that there was a higher degree of non-compliance in patients with early onset of psychosis.

The mean PANSS scores (98.5 ± 8.0) of patients who were non-compliant is higher than that of patients who were compliant ($P < 0.01$). Our findings are in concordance with that of Staring *et al.*[19] and McEvoy *et al.*[20] The mean insight scores on G12 domain of PANSS scale was higher (6.05 ± 0.74) in patients who were non-compliant when compared to that of patients who were compliant indicating poorer insight in patients who were non-compliant. This difference was found to be statistically significant ($P < 0.01$). Our finding is in concordance with the findings of Fenton *et al.*[21] and Coodin *et al.*[22] This might be because the patients with poor insight are usually unaware of their illness and refuse the requirement of medication thus becoming non-compliant to the medication.

The overall mean score of DAI was higher in patients who were compliant and this difference was found to be statistically significant ($P = 0.03$). Similar findings were reported by Adewuya *et al.*[23] and Freudenreich *et al.*[24] This might be due to the fact that the high positive belief in treatment and medication of the family members might be the reasons for the positive attitude of the patient and compliance towards medication.

As per ROMI, perceived daily benefit was the most significant contributing factor to the compliance of medication in our study, which was followed by positive family belief, relapse prevention and pressure or force by the family members. Denial of illness was the most common reason leading to noncompliance. Financial burden, lack of knowledge of illness, reduced access to treatment facilities, side-effects of the medication and substance abuse also stand as significant contributory reasons for non-compliance. Our findings are similar to that of previous studies conducted by Rosa *et al.*[25] and Loffler *et al.*[26] according to which the reasons that significantly predict compliance as per the ROMI items are "perceived daily benefit", positive relationship with clinicians and for non-compliance is "inconvenience due to side-effects."

Limitations
- Self-report methods was used to assess medication compliance
- Patients with irregular follow-ups was not assessed`
- Past history of drug non-compliance was not assessed.
- Difference in compliance rates between patients

using neuroleptics and Atypical antipsychotics was not assessed.

CONCLUSIONS

Our study findings suggest that there is a need for identification and reduction of factors responsible for noncompliance in schizophrenic patients. There is also a need to provide adequate information about mental illness and medications prescribed, to enhance medication compliance and to develop community mental health care facilities for the awareness regarding the illness.

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