

ORIGINAL RESEARCH

Medico-Social Factors Influencing Compliance to Treatment in Patients of Schizophrenia

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ABSTRACT

Introduction: Compliance is defined as "the extent to which a person's behaviour coincides with medical or health advice". Non-compliance for the medication in patients of schizophrenia due to various psycho-social factors, despite of enormous advancement in this area, is an important area of concern 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 6 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-30 scale and Rating of Medication Influences scale respectively. **Results:** in the current study, 25% patients (total=40) were found to be non-compliant to medication. A significant association has been found between unemployment and compliance. The significant reasons for non-compliance in the 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.

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INTRODUCTION

Schizophrenia is a chronic and often disabling illness that usually necessitates antipsychotic medication for long duration which can even extend to lifetime.

Poor treatment adherence and frequent discontinuation of treatment among patients with schizophrenia are common clinical problems and may be responsible for illness chronicity, comorbidity complications, and increased economic burden. 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 prevalent in the case of schizophrenic disorders,

which require continued use of a drug for daily functioning.

As per the existing literature, mean rates of adherence have been found to be around 40–60% (Lacro et al., 2002, Nosé et al., 2003)¹, however, these range widely in individual studies, with some reporting non-adherent patients range between 75% and 90% within 1–2 years of discharge from hospital (Weiden and Zygmunt, 1997, Mullins et al., 2008)².

Antipsychotic treatment reduces the risk of relapse markedly; however, patient discontinue the medication due to several reasons, which include availability of medication nearby in local region, availability of medical health care services in vicinity, cost of therapy, poor understanding of illness etc. Reasons may understandably vary depending on the particular sociocultural context which vary from society to society. This study is conducted to assess the factors influencing compliance to treatment in patients of schizophrenia staying in Central part of India.

MATERIALS AND METHODOLOGY

After seeking approval from the institutional ethics committee, a cross-sectional analytical study was conducted in Psychiatry OPD of Sri Aurobindo Medical college and Post-graduate Institute, Indore. Forty consecutive patients aged more than 18 years of either gender fulfilling the criteria for schizophrenia according to diagnostic and statistical manual of mental disorders (DSM-5)³ with diagnosis of schizophrenia were approached. They were interviewed and socio-demographic data and clinical information was collected on a semi-structured proforma after receiving informed consent. Positive and Negative symptom scale (PANSS)^{4,5} was used for the assessment of severity of symptoms with scoring of ‘mildly ill’, ‘moderately ill’, ‘markedly ill’ and ‘severely ill’ according to the CGI equated to total PANSS scores of 58, 75, 95 and 116 respectively was used⁵, Drug Attitude Inventory (DAI-30)⁶ was used to assess the attitudes towards the Anti-psychotic medication and Rating of Medication Influences (ROMI)² was used to assess subjective reasons of medication compliance/non-compliance. Appropriate statistical tests were applied to the data obtained and value of P < 0.05 was considered statistically significant.

RESULTS

Mean age was 39.3 ± 11.1 and male female ratio was 1.10. Majority of the patients were married (n = 24) and educated until Primary level (n = 12). Most of them were unemployed (n = 24), residing in urban areas (n = 39) and were of lower middle class economic status (n = 24).

Thirteen patients (32.5%) never required hospitalization and 16 patients (40%) required 1-2 hospitalizations. Half of the patients had an illness duration ranging from one to 5 years whereas 12 patients had illness duration of more than 10 years. Hospitalizations were mostly brief as 62.5% of people had a hospital stay of less than 10 days. Most of them (n=27) had continuous illness with varying frequency of follow-up, wherein majority were following up once in every month (n = 17) while some (n=12) had irregular compliance. Most of the recruited patients were severely ill at the time of enrolment (n = 23).

Among various sociodemographic variables studied occupation was the only factor which appeared significantly associated with compliance to treatment wherein compliant DAI-30 group, 10 (33.3%) were homemaker, 6 (20%) were farmer and 6 were professionals, rest of them were semi-skilled, unemployed and unskilled. While in Non-compliant group of DAI-30, all of them were unemployed. (p = 0.03)

Table 1: Illness variables

Substance use was reported by 16 patients (26.7%). More than half of the patients (57.5%) reported their cost of therapy to be between Rs. 1000 to Rs 2000 per month while a small number (5%) reported it to be beyond Rs. 2000 per month. Although most reported that the drugs were easily available nearby (52.5%) but almost equal number (47.5%) reported that they had to procure it from long distance. Additionally, cost of travel was majorly reported between Rs. 500 to Rs. 2000 per month. Most common reason for not taking medicines was absence of insight whereas, 12.5% patients felt that costly medications were responsible for their poor compliance.

Illness variables	DAI-30 group		P-value	
	Compliant	Non-compliant		
1. History of Hospitalization			0.777	
	1-2 times	12		4
	3-4 times	9		2
	No	9		4
	Total	30		10
2. Duration of illness			0.627	
	1-5 years	14		6
	6-10 years	7		1
	>10 years	9		3
	Total	30		10
3. Course of illness			0.330	
	Continuous	19		8
	Episodic	11		2
	Total	30		10
4. Duration of hospital stay in the most recent admission			0.713	

	<10 days	18	7	
	>10 days	10	2	
	None	2	1	
	Total	30	10	
5.	Frequency of follow up			0.561
	Irregular	8	4	
	Once a month	13	4	
	Regularly as advised	8	1	
	Twice a month	1	1	
	Total	30	10	
6.	Substance use			0.077
	Yes	18	3	
	No	12	7	
	Total	30	10	

Table 2: Medicine availability and costs involved

		DAI-30 group		p-value
		Compliant	Non-compliant	
Cost of therapy				0.204
	>2000	2	0	
	1000-2000	19	4	
	500-1000	9	6	
	Total	30	10	
Median cost of transport				0.813
	>1000	1	0	
	500-1000	16	6	
	100-500	13	4	
	Total	30	10	
Availability of the drug				0.361
	Long distance	13	6	
	Nearby	17	4	
	Total	30	10	

Table 3: Compliance of medications (DAI-30)

	Frequency	Percentage
Compliance	30	75.0
Non-compliance	10	25.0
Total	40	100.0

Drug attitude inventory scale showed that compliance with medicines were fairly good with 75% (n=30) patients having good compliance and only 25 % (n=10) were having non-compliance.

Table 5: Reasons for compliance (ROMI)

Reasons for compliance	DAI-30 group						p-value
	Compliant			Non-compliant			
	None	Mild	Strong	None	Mild	Strong	
Perceived benefit	11	3	16	0	1	9	0.071
Positive relationship with clinician	10	13	7	0	6	4	0.104
Positive relationship with therapist	11	9	10	1	6	3	0.037
Relapse prevention	10	3	17	0	1	9	0.099

Pressure/force	17	10	3	3	4	3	0.206
Fear of re-hospitalisation	10	3	17	0	2	8	0.101
Positive family belief	10	3	17	0	3	7	0.062

Of all reasons to assess the reasons for compliance and non-compliance using Rating of Medication Influences (ROMI), positive relationship with therapist was the only reasons having statistically significant association ($p \leq 0.05$) with compliance to treatment. Most of the factors like perceived benefit, positive relationship with clinician, relapse prevention, pressure/force, fear of re-hospitalisation and positive family belief did not show any significant association with compliance and noncompliance to treatment.

Table 6: Reasons For Non-Compliance

Reasons of non-compliance	DAI-30 group						p-value
	Compliant			Non-compliant			
	None	Mild	Strong	None	Mild	Strong	
No perceived benefit	20	6	4	0	6	4	0.001
Negative relation with clinician	20	8	2	0	7	3	0.001
Negative relation with therapist	20	7	3	0	7	3	0.001
Practitioner opposed to medication	20	5	5	0	6	4	0.001
Access to treatment	20	4	6	0	6	4	0.001
Financial obstacles	20	4	6	0	7	3	0.000
Denial of illness	20	4	6	0	6	4	0.001
Medication is unnecessary	20	4	6	0	6	4	0.001
Desires rehospitalization	20	7	3	0	7	3	0.001
Distressed by side effects	20	5	5	0	8	2	0.001
Embarrassment or stigma	20	6	4	0	6	4	0.001
Substance abuse	20	9	1	0	8	2	0.001
Family opposed to medication	20	7	3	0	5	5	0.001

DISCUSSION

The purpose of this study was to elucidate various factors which may have been associated with non-compliance with treatment in patients suffering from schizophrenia. The accurate assessment of compliance is difficult and no single method has been found to be entirely satisfactory.

Available literatures provide a non-compliance rate of 12-60%. In present study, non-compliance is 25%.

PATIENT-RELATED FACTORS

Certain demographic characteristics have been linked to compliance behaviour. Age is a somewhat controversial issue: it seems that patients at the extreme ends of the age distribution have more problems adhering to treatment recommendations. Young, especially male, patients have been found to be poor compliers. One reason for this could be that young adults associate any kind of treatment or keeping scheduled appointments as typical features of the generation they are trying to be different from. On the other hand, the elderly may

have memory deficits, which can impede compliance. Also, they are more prone to receive multiple medications due to physical comorbidities, which is also a predictor of compliance problems. As per various studies, Women tend to be more compliant than men, and younger women have been found to show better compliance than older women. However, in present study, there is no statistically significant association found between compliance to treatment and age/ sex/ marital status. This is concurrent with the previous findings **Diaz et al.**⁷ and study by **Acosta et al.**⁸. In the current study, occupation i.e., patients who were unemployed or unskilled workers were found to be compliant to treatment more than those who were professionals and semi-skilled workers. This difference was found to be statistically significant ($P = 0.03$). This is similar to the finding of **PS Nicolino**⁹. Another issue is the individual health belief model, which reflects patients' thoughts about both the causes and the severity of their illness. In the current study, when patients were asked to relate schizophrenia to other diseases and disorders, most of the patients and even their caretakers judged schizophrenia to be a less important and less serious disorder than some somatic diseases, such as diabetes, epilepsy, or cancer. It was found that denial of illness and substance abuse were significantly associated with non-compliance to treatment ($p = 0.001$). The social perception of an illness may also be of fundamental importance for compliance. Thus, stigma or embarrassment was found to be statistically significant with non-compliance. If the social perception is poor, the patient may try to avoid everything connected with the illness, including its treatment. Hofer and colleagues recently found that a negative attitude toward treatment is related to positive symptoms and certain side effects. Finally, financial problems may also hinder compliance. Some patients may not be able to afford certain anti-psychotics or even afford a bus trip to the pharmacy to buy them. In the current study, financial obstacles were found to be statistically significant with non-compliance to treatment.

These findings were consistent with the findings of study by **I.S Chandra**⁶ and **Rosa et al.**¹⁰.

ENVIRONMENT-RELATED FACTORS

Support and assistance are important variables in medication compliance. Patients who live alone generally have lower compliance rates, while patients who live in supportive environments where they have people caring for them either professionals or significant others are more likely to be compliant. Alternatively, negative attitudes in patients' social environments toward psychiatric treatment or toward the patients themselves have an adverse effect on compliance. Stressful social interactions may counteract the positive influence on compliance that is usually exerted when patients live with others. Due to

lack of social support, accessibility to treatment becomes another problem. Accessibility to treatment refers to difficulty in getting appointments or difficulty in getting medications nearby. In the current study, accessibility to treatment was found to be statistically significant to non-compliance to treatment. This result was in accordance with the findings of **Rosa et al.**¹⁰ and **Loffler et al.**¹¹.

PHYSICIAN-RELATED FACTORS

The therapeutic relationship that the clinician establishes with the patient is the cornerstone of fulfilment. **Nelson and colleagues**¹² reported that the most important factor influencing compliance was the patient's perception of the doctor's interest in him, which was clearly confirmed by the time the doctors spent with the patients. Psychoeducation has been shown to increase compliance and significantly reduce recidivism rates. The belief that information about side effects leads to non-adherence is a common misconception. The structured nature of the treatment conveys to the patient the importance of the treatments performed. Providing appropriate information can also improve understanding and thereby increase the likelihood that patients will accept neuroleptic therapy. **Marder**¹³ showed that such patients were more satisfied with the ward and their doctors. In addition, the doctor must follow the recommendations or recommendations of the treatment. Following these guidelines makes it easier for patients to understand the benefits and rationales of medical procedures, and they are less confused by the conflicting treatment recommendations they may receive when seeking a second opinion. It is important to psycho-educate patients and their caregivers regarding the need of medications in the illness. As in the present study, factors- 'family opposed to medication' and patients' belief that medication is unnecessary were found to be statistically significant with non-compliance to treatment.

In the current study, positive relationship with therapist was found to be significantly associated with compliance to treatment, the only factor in reasons of compliance amongst other factors in ROMI scale. And, bad relationship with doctor as well as therapist was found to be significantly associated with poor compliance to treatment.

TREATMENT-RELATED FACTORS

Van Putten et al.¹⁴ were the first to show that early side effects later lead to a marked decline in compliance. Although adverse drug reactions are often associated with compliance problems, it is important not to oversimplify this association. Some patients clearly adhere to medication despite significant side effects, while others who tolerate antipsychotics may well experience reduced adherence. All these interactions emphasize that patients should be regularly monitored for side effects and that if side effects occur, physicians should give

them due consideration when discussing treatment plans with patients. Because there is considerable variation in the tolerance of side effects between individuals, each type of procedure must be tailored to the specific needs of the patient. Another problem in the treatment of schizophrenia is that most drugs have a delayed effect, so patients do not experience an immediate positive effect. On the contrary, sometimes patients experience side effects before the intended effect. Schizophrenic patients in remission usually do not immediately relapse after stopping treatment. Relapse can occur weeks or even months after stopping the drug, so patients may not associate stopping the drug with a worsening of their condition. On the other hand, some patients with complete remission have difficulty understanding that this remission is related to the drug used. These relationships must be strengthened regularly. Patients may also find that medications are not as effective (or "dangerous") as they expected. The attending physician must give the patient a balanced and realistic overview of the risk-benefit profile of the antipsychotic.

In the current study, side effects and patient's distress due to side effects were found to be statistically significant with non-compliance to treatment. It was similar to finding of **rosa et al¹⁰** and **Loffler et al¹¹**.

CONCLUSION

Majority of the patients studied were complaint to treatments. Among the non-compliant patients lack of insight and cost of treatment were two important reasons quoted by the patients. Good therapeutic relationship with therapist was significantly beneficial towards good compliance. In future, a similar study, if planned, in the community setup can give us further insights.

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