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Study Of Attitude Towards Treatment And Factors Affecting Compliance In Patients With Schizophrenia

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ABSTRACT

Antipsychotic medications are crucial for treating schizophrenia, but non-compliance is a significant issue. Understanding patient attitudes and reasons for non-compliance is key to improving treatment adherence. Study findings show that 40.3% non-compliance rate; higher PANSS scores and poor insight linked to non-compliance. Negative attitudes (DAI-10 scores) correlated with higher non-compliance. ROMI scale indicated better compliance if patients felt treatment benefits, had positive family support, or a good clinician relationship. Educating patients and families about treatment options can improve compliance.

INTRODUCTION

Schizophrenia is a condition characterized by delusions, hallucinations, disorganized thoughts, disorganized behaviour and negative symptoms. (1) Schizophrenia ranks fifth among men and sixth among women as a leading cause of years lived with disability. (2) The classic course of Schizophrenia remains chronic with multiple exacerbations and remissions. (3) Patients with Schizophrenia have a 5% lifetime risk of suicide. (4)

The primary form of treatment for Schizophrenia is Antipsychotic medications. In chronic illness, attitudes towards medications play an important role in the continuation of treatment and regular follow-up. A negative attitude about medication in a patient with schizophrenia will create a negative impact on treatment compliance and adverse effects of the antipsychotic medications such as extrapyramidal symptoms contribute to poor public perception. A patient's ability to tolerate the adverse side effects of antipsychotic medications is significantly influenced by the quality of the doctor–patient relationship, the prescribing physician's attitude, their skill in clearly explaining the treatment plan, and their responsiveness to the patient's concerns. (5)

Compliance, adherence, and concordance all are common terms used in psychiatry regarding regular follow-up and continuation of medication.

Concordance is defined as an agreement reached between a patient and a healthcare professional that respects the beliefs and wishes of the patient in determining whether, when, and how medicines are taken.

Adherence is the extent to which the patient's behaviour aligns with clinical decisions that were mutually agreed upon by the patient and the doctor.

Compliance is the extent to which a patient's behaviour correctly matches the prescriber's care plan as determined by the provider alone. Regarding medications, non-compliance encompasses failure to fill a prescription, refusal to take medication, stopping medications prematurely, and taking the wrong number of medications at the wrong time.

It is estimated that the rate of non-compliance is about 50% during the first year and 75% during the second year after the patients are discharged from the inpatient care unit.

Jim Rosack explained the phenomenon of adherence to medication in terms of Refill Rate. Refill Rate is the proportion of days of proper adherence to the prescribed medication by the patient calculated in relation to the total days of advice. (6)

Improving medication compliance in patients with Schizophrenia holds the potential for reducing morbidity and suffering of patients and their families, in addition to decreasing the cost of re-hospitalization. (15) One of the ways to improve drug compliance is by knowing about the attitudes and reasons responsible for poor drug compliance and then planning for appropriate management strategies to improve it. The current study has tried to assess the attitude towards medication and reasons for compliance as well as non-compliance among patients with schizophrenia, which can

provide a basis for planning effective interventional strategies for mental health professionals for improving compliance among patients in the future.

Materials and Methods

Study Design

A cross-sectional study was conducted on 144 patients with Schizophrenia attending the outpatient department in the Psychiatry Department at S.S.G. Hospital.

Inclusion Criteria

Schizophrenia patients (diagnosed with DSM 5) aged between 18 to 60 years who gave a written informed consent

Exclusion Criteria

Patients who are on medication < 6-month duration, without a reliable informant, having a terminal illness, suffering from serious comorbid medical illness and/or suffering from any other psychiatric illness were not included in the study.

Assessment Tools

DRUG ATTITUDE INVENTORY (DAI) (9)

To assess patient's attitude towards medication

The DAI-10 was derived from the responses of 150 schizophrenia patients to the DAI-30 (Awad, 1993). It contains six items rated as 'True' for fully adherent patients and four items rated as 'False'. A positive total score indicates adherence, while a negative score indicates non-adherence.

RATING OF MEDICAL INFLUENCES SCALE (ROMI) (8)

To assess reasons for compliance or non-compliance to treatment

The ROMI assesses the patient's reasons for medication compliance and non-compliance through semi-structured and structured interviews. Part 1 evaluates reasons for compliance with 7 questions, while Part 2 assesses reasons for non-compliance with 13 items.

DSM-5 DIAGNOSTIC CRITERIA FOR SCHIZOPHRENIA (7)

For diagnosis of Schizophrenia

PANSS (POSITIVE AND NEGATIVE SYMPTOMS OF SCHIZOPHRENIA) SCALE (16)

To assess the severity of symptoms

Consists of 30 items out of which 7 constitute a Positive Scale, 7 a Negative Scale, and the remaining 16 a General Psychopathology Scale. The scores for these scales are arrived at by summation of ratings across component items. Therefore, the potential ranges are 7 to 49 for the Positive and Negative Scales and 16 to 112 for the General Psychopathology Scale.

Study Procedure

Data collection for the study on schizophrenia patients' medication adherence and symptoms severity began after receiving approval from the Ethical Committee. Every third patient at the S.S.G. Hospital Psychiatric Outpatient Department who gave informed consent was enrolled in the study. They underwent a personal interview and questionnaire to assess medication adherence and symptoms severity using PANSS. Attitude towards medication was assessed using DAI-10, and reasons for compliance and non-compliance were evaluated using ROMI Scale.

Sample Size

The sample size of 144 was calculated based on the hypothesis testing method considering a 95% confidence interval and 20% relative precision. The prevalence of drug non-compliance in schizophrenia reported in various previous studies was around 40% to 50%.

Ethical Consideration

The study was approved by IECHR (Institutional Ethics Committee for Human Research) of Medical College and S. S. G. Hospital, Vadodara. It was a questionnaire-based study and no invasive techniques were used.

Statistical Consideration

Data was entered in MS Excel 2010 and analyzed using Epi info 7 software. The Chi-square test was used to test for differences between groups in categorical variables. Independent t-test and ANOVA test were done to test for differences between groups in continuous variables. The p-values less than 0.05 were considered significant.

Results

In the current study of 144 schizophrenia patients, most were middle-aged, married Hindu females from rural and urban areas with a primary education. The majority were unemployed, mainly housewives from a lower-middle socioeconomic class. Over 70% had onset of schizophrenia between ages 20 and 40. Nearly 93% reported no treatment side effects. Around 31% paid more than Rs. 100 for transportation to obtain medicines. Out of the 144 patients, 86 (59.7%) were compliant, and 58 (40.3%) were non-compliant.

TABLE 1: ASSOCIATION BETWEEN COMPLIANCE AND NEGATIVE COMPONENT SCORE OF PANSS

TOTAL PANSS N SCORE RANGE	COMPLIANT	NON-COMPLIANT	TOTAL	
7-14	73	30	103 (71.5%)	P = 0.0021
15-21	6	14	20 (13.9%)	
22-28	3	11	14 (9.7%)	Chi-square = 9.479
29-35	2	3	5 (3.5%)	
36-42	2	0	2 (1.4%)	

TABLE 2: ASSOCIATION BETWEEN COMPLIANCE AND POSITIVE COMPONENT SCORE OF PANSS

TOTAL P SCORE RANGE	COMPLIANT	NON-COMPLIANT	TOTAL	
7-14	77	20	97 (67.4%)	P < 0.0001
15-21	9	27	36 (25.0%)	
22-28	0	9	9 (6.2%)	Chi-square = 46.051
29-35	0	2	2 (1.4%)	

TABLE 3: ASSOCIATION BETWEEN COMPLIANCE AND G12 (LACK OF JUDGMENT AND INSIGHT) SCORE OF PANSS

G12 SCORE	COMPLIANT	NON-COMPLIANT	TOTAL	
1 (ABSENT)	68	11	79 (55.2%)	P < 0.0001
2 (MINIMAL)	5	8	13 (9.1%)	
3 (MILD)	7	4	11 (7.7%)	
4 (MODERATE)	3	12	15 (10.5%)	Chi-square = 63.077
5 (MODERATE-SEVERE)	0	7	7 (4.9%)	
6 (SEVERE)	2	16	18 (12.6%)	

TABLE 4: ASSOCIATION BETWEEN COMPLIANCE AND TOTAL DAI-10 SCORE

TOTAL DAI-10 SCORE	COMPLIANT	NON-COMPLIANT	TOTAL	
NEGATIVE SCORE (-10 TO -1)	1	26	27 (18.8%)	P < 0.0001
ZERO SCORE	5	8	13 (9.0%)	
POSITIVE SCORE (1 TO 10)	80	24	104 (72.2%)	Chi-square = 50.458

The prevalence of noncompliance was more in patients with a PANSS G12 score of 4 or more. This indicates that patients with poor insight and lack of judgement were more noncompliant than patients with intact judgement and insight.

The mean total PANSS score of noncompliant patients was significantly higher than the mean total PANSS score of compliant patients. The mean G12 PANSS score of noncompliant patients was significantly higher than the mean G12 PANSS score of compliant patients.

A significant association was found between compliance and total DAI-10 score. The prevalence of noncompliance was significantly more in patients with a negative score. Compliance was found to be significantly better in patients with a positive score.

As per ROMI open-ended questions section, the majority of the patients (54.7%) reported they maintained compliance to treatment as 'they felt better on treatment'. 26.7% of compliant patients maintained compliance because they believed they had a mental illness. 7% of them took continued treatment to prevent relapse of symptoms. 5.8% of patients maintained compliance because they were forced by relatives to take the treatment and because the doctor advised respectively.

As per ROMI closed-ended questions section, a positive family belief was the most common reason for maintaining compliance with treatment. Perceived daily benefit, positive relationship with the prescribing clinician and the therapist, and relapse prevention were the other common reasons reported to maintain compliance. Fear of re-hospitalization and pressure/force were the 2 least common reasons to maintain compliance.

TABLE 5: SUBJECTIVE REASONS FOR NON-COMPLIANCE IN COMPLIANT AND NON-COMPLIANT PATIENTS (ROMI OPEN-ENDED QUESTION SECTION)

	REASON	COMPLIANT (n=86)	NON-COMPLIANT (n=58)	TOTAL (n=144)
1	Don't need medicines now	14	7	21 (14.6%)
2	May cause adverse effects in the future if taken for a long time	12	8	20 (13.9%)
3	Not effective	5	11	16 (11.1%)
4	Side effects	14	2	16 (11.1%)
5	Embarrassment	6	8	14 (9.7%)
6	Difficulty in transportation	9	4	13 (9.0%)
7	Financial problems	8	3	11 (7.6%)
8	I don't believe I have any mental illness	2	8	10 (6.9%)
9	My family doesn't think I need medicines	9	1	10 (6.9%)
10	Don't want to visit the hospital	4	2	6 (4.2%)
11	Because I feel the medicine controls my body	0	2	2 (1.4%)
12	No benefit in taking it long-term	0	2	2 (1.4%)
13	None	3	0	3 (2.1%)

Table 5 shows subjective reasons for non-compliance in both compliant and non-compliant subjects as inferred from the ROMI open-ended questions section. The most common reason reported by subjects for stopping the treatment was that they felt they did not need the medicines now (14.6%). The second most common reason to stop the treatment was that they feared the medicines may cause severe adverse effects if taken for a long period (13.9%). The next most common cause and the most common cause for non-compliance in non-compliant patients was that they believed that the medicines were not effective (11.1%). The most common reason to think of stopping the treatment in compliant patients was the side effects of the treatment. 9.7% of the subjects did not want to continue the treatment because of social embarrassment.

TABLE 6: SUBJECTIVE REASONS FOR NON-COMPLIANCE IN COMPLIANT AND NON-COMPLIANT PATIENTS (ROMI CLOSED-ENDED QUESTION SECTION)

REASON	INFLUENCE	COMPLIANT	NON-COMPLIANT	TOTAL	SIGNIFICANCE
8. NO PERCEIVED DAILY BENEFIT	NONE	66	22	88 (61.1%)	P < 0.0001 Chi-squared: 30.041
	MILD	19	21	40 (27.8%)	
	STRONG	1	15	16 (11.1%)	
9. NEGATIVE RELATION WITH THE CLINICIAN	NONE	79	56	135 (93.7%)	P = 0.2557 Chi-squared: 1.292
	MILD	7	2	9 (6.2%)	
	STRONG	-	-	-	
10. NEGATIVE RELATION WITH THERAPIST	NONE	81	58	139 (96.5%)	P = 0.0625 Chi-squared: 3.469
	MILD	5	0	5 (3.5%)	
	STRONG	-	-	-	
11. PRACTITIONER OPPOSED TO MEDS	NONE	83	58	141 (97.9%)	P = 0.1520 Chi-squared: 2.052
	MILD	3	0	3 (2.1%)	
	STRONG	-	-	-	
12. FAMILY/FRIEND OPPOSED TO MEDS	1 (NONE)	65	47	112 (77.8%)	P = 0.0383 Chi-squared: 6.523
	2 (MILD)	21	8	29 (20.1%)	
	3 (STRONG)	0	3	3 (2.1%)	

13. ACCESS TO TREATMENT PROBLEMS	1 (NONE)	59	33	92 (63.9%)	P = 0.1107 Chi-squared: 4.402
	2 (MILD)	26	21	47 (32.6%)	
	3 (STRONG)	1	4	5 (3.5%)	
14. EMBARRASSMENT OR STIGMA OVER ILLNESS/MEDS	1 (NONE)	57	28	85 (59.0%)	P = 0.0256 Chi-squared: 7.333
	2 (MILD)	26	22	48 (33.3%)	
	3 (STRONG)	3	8	11 (7.6%)	
15. FINANCIAL OBSTACLES	1 (NONE)	57	31	88 (61.1%)	P = 0.1613 Chi-squared: 3.649
	2 (MILD)	24	19	43 (29.9%)	
	3 (STRONG)	5	8	13 (9.0%)	
16. SUBSTANCE ABUSE	1 (NONE)	70	51	121 (84.0%)	P = 0.2248 Chi-squared: 2.985
	2 (MILD)	15	5	20 (13.9%)	
	3 (STRONG)	1	2	3 (2.1%)	
17. DENIAL OF ILLNESS	1 (NONE)	63	9	72 (50.0%)	P < 0.0001 Chi-squared: 49.563
	2 (MILD)	15	20	35 (24.3%)	
	3 (STRONG)	8	29	37 (25.7%)	
18. MEDICATION CURRENTLY UNNECESSARY	1 (NONE)	63	13	76 (52.8%)	P < 0.0001 Chi-squared: 40.884
	2 (MILD)	17	20	37 (25.7%)	
	3 (STRONG)	6	25	31 (21.5%)	
19. DISTRESSED BY SIDE EFFECTS	1 (NONE)	68	39	107 (74.3%)	P = 0.0008 Chi-squared: 14.239
	2 (MILD)	18	10	28 (19.4%)	
	3 (STRONG)	0	9	9 (6.2%)	
20. DESIRES RE-HOSPITALIZATION	1 (NONE)	70	41	111 (77.1%)	P = 0.1004 Chi-squared: 4.596
	2 (MILD)	14	17	31 (21.5%)	
	3 (STRONG)	2	0	2 (1.4%)	

Table 6 shows subjective reasons for non-compliance in both compliant and non-compliant subjects as inferred from the ROMI closed-ended questions section and the association of these reasons with compliance. Non-compliance was significantly more in subjects who strongly believed that medicines had no perceived benefit in controlling their illness (p<0.0001). Non-compliance was significantly more in patients whose family/friends opposed medicines (p=0.038). Non-compliance was significantly more in subjects who were strongly embarrassed or had a stigma about their mental illness or taking medicines for the illness(p=0.0256). Non-compliance was significantly more in patients who did not believe they had any kind of mental illness (p<0.0001). Non-compliance was significantly more in patients who felt that medicines were currently unnecessary (p<0.0001). Non-compliance was significantly more common in subjects who were distressed by side effects (p=0.0008).

DISCUSSION

1. Prevalence of Non-compliance

In the present study of 144 patients, 58 patients were non-compliant to the treatment. Thus, the

prevalence of non-compliance in the present study was 40.3%. This was similar to the other reference studies. In the study conducted by Charmi Shah et al (10) among 80 patients of schizophrenia, the prevalence of non-compliance to treatment was 37.5%. Similarly, a study conducted by Chandra et al (11) among 105 patients, showed non-compliance of 41.9%. In a study conducted by Baby et al (12) among 75 patients, the prevalence of non-compliance was found to be 38.7%. In a prospective study conducted by Rosa MA et al (13) in Brazil among 50 patients, the rate of non-compliance over one year was 48%. On the contrary, in a study conducted by Subedi et al (14) in Nepal among 94 subjects, the prevalence of non-compliance was as high as 89.4%.

2. Reasons for compliance to treatment

In the present study, the most common reason (54.7%) for maintaining compliance given by compliant patients was that 'they felt better on treatment'. The second most common reason (26.7%) was they believed they had a mental illness. Other reasons provided were to prevent relapse of symptoms, because they were forced by relatives to take the treatment and because the doctor advised respectively. On assessing the same through ROMI closed-ended question section, a positive family belief was the most common reason for maintaining compliance to treatment. Perceived daily benefit, positive relationship with the prescribing clinician and the therapist, and relapse prevention were the other common reasons reported to maintain compliance. Fear of re-hospitalization and pressure/force were the 2 least common reasons to maintain compliance. Similar findings were seen in a study by Charmi Shah et al (10) in which the most common reason given for the same was because they had a mental illness. Other popular reasons were family belief, family force and to prevent relapse. The most common reasons through the closed-ended question section were perceived daily benefit, acceptance of mental illness, positive family belief, and pressure/force. Similar findings were seen in a study by Chandra et al (11) and Rosa MA et al (13). In a study conducted by Baby et al (12), in addition to the above-mentioned reasons, a positive relationship with the treating psychiatrist was a significant reason for maintaining compliance.

3. Reasons for non-compliance to treatment

In the present study, the most common reason reported by subjects for stopping the treatment, as inferred from the ROMI open-ended questions section, was that they felt they did not need the medicines now (14.6%), which was the same finding found in the study conducted by Charmi Shah et al (10). The second most common reason to stop the treatment was that they feared the medicines may cause severe adverse effects if taken for a long period (13.9%). The next most common cause and the most common cause for non-compliance in non-compliant patients was that they believed that the medicines were not effective (11.1%). In a study by Rosa MA et al (13), 'forgetfulness' and 'a desire to be normal' were two common reasons in the open questions section. As inferred from ROMI closed-ended questions section, there was a significant association of compliance with the reason 'no perceived benefit', which was a similar finding to the study conducted by Charmi Shah et al (10) and Baby et al (12). Non-compliance was significantly more in subjects who were strongly embarrassed or had a stigma about their mental illness or taking medicines for the illness which was a similar finding in a study by Baby et al. (12). Non-compliance was significantly more in patients who did not believe they had any kind of mental illness. This finding was similar to that in a study by Chandra et al (11) and Rosa MA et al (13). Non-compliance was significantly more in patients who felt that medicines were currently unnecessary which was a similar finding in the study by Chandra et al (11) and Baby et al (12). Non-compliance was significantly more common in subjects who were distressed by side-effects which were similar to the finding in the study by Chandra et al (11). The other significant reasons for non-compliance in a study by Chandra et al (11) were financial obstacles, access to treatment problems, and substance abuse. The other significant reasons for non-compliance in a study by Baby et al (12) were negative relations with the treating psychiatrist and financial obstacles.

4. Assessment of attitude towards treatment of the patients

In the present study, patients' attitude towards treatment was assessed by Drug Attitude Inventory-10 (DAI-10). A significant association was found between compliance and total DAI-10 score. The prevalence of noncompliance was significantly more in patients with a negative score. Compliance was found to be significantly better in patients with a positive score. This finding was similar to that found in the study by Charmi Shah et al (10) and Chandra et al (11).

CONCLUSION

The study emphasizes the challenges of non-compliance in treating chronic illnesses like schizophrenia. The study revealed a 40% non-compliance rate, with non-compliance more prevalent in patients with severe illness and poor insight. Reasons for non-compliance included patients feeling they no longer needed the medication and perceiving it as ineffective. Educating patients, their families, and improving their attitudes

toward medication were identified as crucial factors for better compliance.

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REFERENCES

1. Diagnostic and Statistical Manual of Mental Disorders Fifth Edition published by American Psychiatric Publishing; 2013
2. Lora A, Kohn R, Levav I, McBain R, Morris J, Saxena S. Service availability and utilization and treatment gap for schizophrenic disorders: a survey in 50 low-and middle-income countries. Bulletin of the World Health Organization. 2012;90:47-54B.
3. Bota RG, Munro S, Nguyen C, Preda A. Course of Schizophrenia: What Has Been Learned from Longitudinal Studies? In Handbook of Schizophrenia Spectrum Disorders, Volume II 2011 (pp. 281-300). Springer, Dordrecht.
4. Haro JM, Novick D, Bertsch J, Karagianis J, Dossenbach M, Jones PB. Cross-national clinical and functional remission rates: Worldwide Schizophrenia Outpatient Health Outcomes (W-SOHO) study. The British Journal of Psychiatry. 2011;199(3):194-201.
5. Helbling J, Ajdacic-Gross V, Lauber C, Weyermann R, Burns T, Rössler W. Attitudes to antipsychotic drugs and their side effects: a comparison between general practitioners and the general population. BMC Psychiatry. 2006;6:42.
6. Rosack J. Education on medication adherence will reduce costs, improve outcomes. Psychiatry News 2004;39:20.
7. Diagnostic and Statistical Manual of Mental Disorders Fifth Edition published by American Psychiatric Publishing; 2013
8. Weiden P, Rapkin B, Mott T, Zygmunt A, Goldman D, Horvitz-Lennon M, Frances A. Rating of medication influences (ROMI) scale in schizophrenia. Schizophrenia bulletin. 1994 Jan 1;20(2):297-310.
9. Hogan TP, Awad AG, Eastwood R. A self-report scale predictive of drug compliance in schizophrenics: reliability and discriminative validity. Psychological medicine. 1983 Feb;13(1):177-83.
10. Shah, C., Patel, K., Amin, N., & Shah, C. (2019). Study of various factors affecting compliance in schizophrenia: A single center experience in India. *Archives of Psychiatry and Psychotherapy*, *3*, 41-52.
11. Chandra, I. S., Kumar, K. L., Reddy, M. P., & Reddy, C. M. P. K. (2014). Attitudes toward medication and reasons for non-compliance in patients with schizophrenia. *Indian journal of psychological medicine*, *36*(3), 294-298.
12. Baby, R. S., Gupta, S., & Sagar, R. (2009). Attitudes and subjective reasons of medication compliance and noncompliance among outpatients with schizophrenia in India. *Internet J Epidemiol*, *7*(1), 1-9.
13. Rosa, M. A., Marcolin, M. A., & Elkis, H. (2005). Evaluation of the factors interfering with drug treatment compliance among Brazilian patients with schizophrenia. *Brazilian Journal of Psychiatry*, *27*, 178-184.
14. Paudel, K., & Subedi, S. (2019). Treatment Non-Compliance In Patients Suffering From Schizophrenia And Bipolar Affective Disorder (BPAD): A Comparative Study. *Journal of Psychiatrists' Association of Nepal*, *8*(2), 20-25.
15. Nageotte, C., Sullivan, G., Duan, N., & Camp, P. L. (1997). Medication compliance among the seriously mentally ill in a public mental health system. Social Psychiatry and Psychiatric Epidemiology, 32(2), 49-56.
16. Kay SR, Fiszbein A, Opler LA. The positive and negative syndrome scale (PANSS) for schizophrenia. Schizophrenia bulletin. 1987 Jan 1;13(2):261-76.