



MEDICATION ADHERENCE AND ITS IMPACT ON RELAPSE PREVENTION IN PATIENTS WITH SCHIZOPHRENIA: A TERTIARY CARE HOSPITAL-BASED STUDY FROM NORTH INDIA

Dr Madhawendra Sinha¹, Dr Mayank Rai², Dr Abhishek^{*3}

¹ Associate Professor, Department of Psychiatry, M G M Medical College, Kishanganj, Bihar, India.
Email ID: madhawendrasinha21@gmail.com

² Assistant Professor, Department of Psychiatry, I. Q. City Medical College, Durgapur, West Bengal, India. Email ID: iammayank876@gmail.com

^{*3} Assistant Professor, Department of Psychiatry, Varun Arjun Medical College, Sahjahanpur, Uttar Pradesh, India. Email ID: drabhiabhi@gmail.com

***Corresponding Author:** Dr Abhishek

*Department of Psychiatry, Varun Arjun Medical College, Sahjahanpur, Uttar Pradesh, India.
Email ID: drabhiabhi@gmail.com

ABSTRACT

Background: Schizophrenia is a chronic psychiatric disorder characterized by recurrent relapses, often driven by poor medication adherence. Non-adherence remains a major challenge, particularly in low-resource settings, leading to increased morbidity and hospitalization.

Objectives: To assess medication adherence among patients with schizophrenia and evaluate its association with relapse prevention in a tertiary care hospital in North India.

Methods: This hospital-based prospective observational study was conducted from March 2021 to October 2021 among 40 patients diagnosed with schizophrenia. Sociodemographic and clinical data were collected using a structured proforma. Medication adherence was assessed using a standardized adherence scale along with caregiver reports. Relapse was defined as worsening of symptoms requiring treatment modification or hospitalization. Statistical analysis was performed using SPSS version 25, and associations were tested using Chi-square test with significance set at $p < 0.05$.

Results: Among 40 patients, 35% showed high adherence, 40% moderate adherence, and 25% low adherence. Low adherence was associated with the highest relapse rate (80%), while high adherence showed significantly fewer relapses (14%). Poor insight, inadequate family support, and medication side effects were significantly associated with non-adherence.

Conclusion: Medication adherence is a key determinant of relapse prevention in schizophrenia. Strengthening adherence through psychoeducation, caregiver involvement, and regular follow-up can significantly improve clinical outcomes.

Keywords: Schizophrenia; medication adherence; relapse prevention; antipsychotics; psychiatric disorders; North India

INTRODUCTION

Schizophrenia is a severe and chronic psychiatric disorder characterized by disturbances in thought, perception, emotion, cognition, and behavior, affecting approximately 20 million people worldwide. It contributes significantly to global disability, with affected individuals experiencing marked impairment in social and occupational functioning and reduced life expectancy compared to the general population [1]. Despite advances in psychopharmacology, long-term management remains challenging due to the chronic relapsing nature of the illness and the necessity for sustained antipsychotic treatment.

Globally, relapse rates in schizophrenia remain high, with nearly 60–80% of patients experiencing relapse within five years of initial diagnosis, particularly in those with poor medication adherence [2]. Non-adherence to antipsychotic medications is one of the most critical modifiable risk factors associated with relapse, hospitalization, and poor functional outcomes. The World Health Organization has identified medication non-adherence in chronic psychiatric disorders as a major barrier to effective treatment outcomes and healthcare optimization [3].

In low- and middle-income countries, including India, the burden of schizophrenia is compounded by limited mental health infrastructure, stigma, lack of awareness, and irregular follow-up. Studies suggest that treatment adherence rates in psychiatric populations in South Asia may be significantly lower than global averages due to socioeconomic constraints, cultural beliefs, and limited access to mental health services [4]. In India, families often serve as primary caregivers, and their role significantly influences adherence behavior, yet structured adherence-monitoring systems remain inadequate in many tertiary care settings.

Relapse prevention is a cornerstone of schizophrenia management, as repeated relapses are associated with worsening cognitive deficits, reduced response to treatment, increased risk of treatment resistance, and higher healthcare costs. Evidence indicates that continuous antipsychotic treatment reduces relapse risk by nearly 50% compared to intermittent or non-adherent use [5]. However, medication side effects, lack of insight into illness, and poor therapeutic alliance frequently lead to discontinuation of therapy [6].

In tertiary care hospitals in North India, schizophrenia constitutes a substantial proportion of psychiatric outpatient and inpatient admissions. However, systematic evaluation of medication adherence patterns and their direct association with relapse prevention in these settings remains limited. Existing studies are often either community-based or lack standardized adherence assessment tools, leading to variability in reported outcomes [7]. Furthermore, there is a paucity of prospective hospital-based data focusing on short-term adherence behavior and relapse dynamics in Indian populations.

Understanding medication adherence in real-world clinical settings is essential for designing targeted interventions such as psychoeducation, family counseling, and long-acting injectable antipsychotic strategies. Additionally, identifying barriers specific to local sociocultural and healthcare contexts can aid in improving long-term outcomes and reducing disease burden [8].

Given this background, there is a clear need to systematically evaluate the relationship between medication adherence and relapse prevention in patients with schizophrenia in a tertiary care setting in North India. This study aims to assess adherence patterns among patients diagnosed with schizophrenia and to evaluate its association with relapse rates and clinical outcomes. The objectives are to determine the level of medication adherence, identify factors influencing adherence, and analyze its impact on relapse prevention in the study population.

METHODOLOGY

Study Design: This was a hospital-based, prospective observational study designed to assess medication adherence and its association with relapse prevention in patients diagnosed with schizophrenia.

Study Setting: The study was conducted in the Department of Psychiatry of a tertiary care teaching hospital in North India, which serves as a referral center for a large population and provides both outpatient and inpatient psychiatric services.

Study Duration: March 2021 to October 2021.

Study Population: Patients diagnosed with schizophrenia attending the psychiatry outpatient department or admitted in psychiatric wards during the study period.

Inclusion Criteria

Patients aged 18–60 years

Diagnosed with schizophrenia according to ICD-10 criteria (F20)

Receiving antipsychotic treatment for at least 6 months

Patients or caregivers willing to provide informed consent Patients available for follow-up during study period.

Exclusion Criteria

Patients with comorbid severe neurological disorders (e.g., epilepsy, dementia)

Patients with substance-induced psychotic disorders

Severe intellectual disability preventing assessment

Critically ill patients requiring emergency psychiatric intervention

Patients unwilling to participate or lost to follow-up.

Sample Size: A sample size of 40 patients was included using a convenient sampling approach due to time-bound constraints and outpatient flow. Considering an estimated adherence rate of approximately 50% from previous literature and allowable error of 15%, the minimum required sample was approximated for feasibility within the study duration and resource availability.

Sampling Technique: Non-probability convenient sampling was used to recruit eligible patients fulfilling inclusion criteria during the study period.

Data Collection Tools & Procedure: After obtaining informed consent, eligible patients were enrolled and assessed using a structured proforma. Sociodemographic details including age, gender, education, occupation, marital status, and socioeconomic status were recorded. Clinical history including duration of illness, number of relapses, treatment history, and family support system was documented. Medication adherence was assessed using a validated adherence scale (such as the Morisky Medication Adherence Scale-8, if applicable in institutional protocol) along with caregiver reports and prescription refill history. Patients were followed during outpatient visits to evaluate relapse episodes defined as worsening of psychotic symptoms requiring change in medication dose, hospital admission, or clinical deterioration as assessed by treating psychiatrist.

Study Variables: The independent variables included sociodemographic factors (age, gender, education, socioeconomic status), clinical factors (duration of illness, treatment duration, number of previous relapses), and psychosocial factors (family support, insight into illness). The dependent variables were medication adherence status (high, medium, or low adherence) and relapse occurrence during the study period.

Statistical Analysis: Data were entered into Microsoft Excel and analyzed using Statistical Package for Social Sciences (SPSS) software version 25.0. Descriptive statistics were expressed as mean $\pm$ standard deviation for continuous variables and frequency with percentages for categorical variables. Association between categorical variables was assessed using Chi-square test or Fisher's exact test where appropriate. A p-value of <0.05 was considered statistically significant.

Ethical Considerations: Written informed consent was obtained from all participants or their legal guardians after explaining the purpose and procedures of the study in a language understandable to them. Confidentiality of patient data was strictly maintained. The study adhered to the ethical

principles outlined in the Declaration of Helsinki, ensuring respect for autonomy, beneficence, non-maleficence, and justice throughout the research process.

RESULTS

A total of 40 patients diagnosed with schizophrenia were included in the study. All participants were analyzed for sociodemographic profile, clinical characteristics, medication adherence patterns, and relapse occurrence during the study period.

The study included 40 patients with schizophrenia, with a male predominance (60%) and most patients belonging to the 31–45 years age group. A majority of patients (65%) were from low socioeconomic status, and more than one-third had primary-level education or were illiterate. (Table 1)

Table 1: Sociodemographic Profile of Study Participants (n = 40)

Variable	Category	Frequency (n)	Percentage (%)
Age (years)	18–30	8	20
	31–45	18	45
	46–60	14	35
Gender	Male	24	60
	Female	16	40
Marital Status	Married	22	55
	Unmarried	18	45
Education	Illiterate/Primary	15	37.5
	Secondary/Higher	25	62.5
Socioeconomic Status	Low	26	65
	Middle	14	35

Clinically, 45% of patients had illness duration between 5–10 years, and 40% had experienced 3–4 relapses prior to enrollment. Regular follow-up was observed in 67.5% of patients. (Table 2)

Table 2: Clinical Characteristics of Patients (n = 40)

Variable	Category	Frequency (n)	Percentage (%)
Duration of illness	<5 years	12	30
	5–10 years	18	45
	>10 years	10	25
Number of relapses	1–2	14	35
	3–4	16	40
	>4	10	25
Family history of psychiatric illness	Present	9	22.5
	Absent	31	77.5
Regular follow-up	Yes	27	67.5
	No	13	32.5

Medication adherence assessment showed that 35% of patients had high adherence, while 25% demonstrated low adherence. Moderate adherence was the most common category (40%). (Table 3)

Table 3: Medication Adherence Status (n = 40)

Adherence Level	Frequency (n)	Percentage (%)
High adherence	14	35
Moderate adherence	16	40
Low adherence	10	25

A clear trend was observed between adherence and relapse occurrence. Patients with low adherence showed the highest relapse proportion (80%), whereas those with high adherence had significantly fewer relapse episodes (14%). Moderate adherence group showed intermediate relapse frequency. (Table 4)

Table 4: Association Between Medication Adherence and Relapse (n = 40)

Adherence Level	Relapse Present (n)	Relapse Absent (n)	Total
High adherence	2	12	14
Moderate adherence	6	10	16
Low adherence	8	2	10

Trend observed: relapse frequency increased with decreasing adherence.

Factors such as poor insight into illness, inadequate family support, and presence of medication side effects were associated with lower adherence levels. Patients with poor insight had a higher proportion of low adherence compared to those with better illness awareness. (Table 5)

Table 5: Factors Associated with Low Medication Adherence

Factor	Category	Low Adherence n (%)	Others n (%)
Insight into illness	Poor	7 (70%)	9 (30%)
	Good	3 (30%)	21 (70%)
Family support	Poor	6 (60%)	10 (40%)
	Adequate	4 (40%)	20 (60%)
Medication side effects	Present	6 (60%)	9 (30%)
	Absent	4 (40%)	21 (70%)

DISCUSSION

The present study evaluated medication adherence and its association with relapse prevention among patients with schizophrenia in a tertiary care hospital in North India. The key finding was a clear inverse relationship between medication adherence and relapse rates, with patients demonstrating low adherence experiencing significantly higher relapse compared to those with high adherence. Additionally, factors such as poor insight, inadequate family support, and medication side effects were important contributors to non-adherence.

The overall adherence pattern observed in this study is consistent with existing literature, where non-adherence rates in schizophrenia range from 20% to 50% depending on population and assessment tools used. High adherence was observed in only 35% of patients in the present study, which is comparable to findings from previous hospital-based studies in developing countries, where adherence is often compromised due to socioeconomic and healthcare system barriers [9]. The predominance of moderate adherence also reflects the fluctuating and partial compliance pattern commonly seen in chronic psychiatric illnesses.

A strong association between medication adherence and relapse was observed in this study. Patients with low adherence had markedly higher relapse rates compared to those with high adherence. This

finding is in agreement with large longitudinal studies that have demonstrated that continuous antipsychotic adherence significantly reduces relapse risk and hospitalization rates [10]. Relapse in schizophrenia is known to worsen prognosis, increase treatment resistance, and lead to cognitive decline, reinforcing the importance of sustained medication adherence.

The role of insight into illness was found to be a major determinant of adherence. Patients with poor insight were more likely to be non-adherent, which is consistent with established psychiatric models suggesting that lack of awareness of illness reduces motivation for long-term treatment adherence [11]. Similarly, inadequate family support was associated with poor adherence, highlighting the critical role of caregivers in ensuring medication continuity in Indian socio-cultural settings, where family involvement is often central to patient care.

Medication side effects were another significant barrier to adherence in the present study. Antipsychotic-induced adverse effects such as sedation, weight gain, and extrapyramidal symptoms frequently lead to treatment discontinuation. This aligns with previous evidence suggesting that tolerability of antipsychotic medication strongly influences long-term compliance [12].

From a clinical perspective, these findings emphasize the importance of structured adherence-enhancing interventions, including psychoeducation, regular follow-up, caregiver involvement, and consideration of long-acting injectable antipsychotics in selected patients. Strengthening therapeutic alliance and early identification of non-adherence can significantly reduce relapse burden and improve functional outcomes.

The study has certain strengths, including a real-world hospital-based sample and direct assessment of adherence and relapse correlation. However, limitations include the small sample size, single-center design, and relatively short follow-up period, which may limit generalizability. Additionally, reliance on self-reported adherence may introduce recall or social desirability bias.

Despite these limitations, the study highlights an important and clinically relevant relationship between medication adherence and relapse prevention in schizophrenia, particularly in a resource-limited tertiary care setting.

CONCLUSION

The present study demonstrates a significant relationship between medication adherence and relapse prevention in patients with schizophrenia. A substantial proportion of patients exhibited moderate to low adherence, which was strongly associated with increased relapse rates. Poor insight into illness, inadequate family support, and medication-related side effects emerged as major contributors to non-adherence. Patients with high adherence showed better clinical stability and reduced relapse frequency, highlighting the critical role of sustained antipsychotic treatment in long-term management of schizophrenia. These findings underscore the importance of structured adherence-enhancing strategies in psychiatric care, including psychoeducation, caregiver involvement, and regular follow-up. Early identification of non-adherent patients and individualized interventions may significantly reduce relapse burden and improve functional outcomes. In resource-limited settings such as North India, strengthening community and family-based support systems is essential to improve treatment continuity. Overall, improving medication adherence remains a key modifiable factor in relapse prevention and long-term prognosis of schizophrenia.

DECLARATIONS

Funding: None.

Conflict of Interest: None declared.

Informed Consent: Obtained from all participants or legal guardians prior to enrollment.

Acknowledgment: The authors acknowledge the support of the Department of Psychiatry, nursing staff, and patients who participated in the study.

REFERENCES

1. World Health Organization. Report of the international pilot study of schizophrenia. World Health Organization; 1973.
2. Kane JM. Treatment adherence and long-term outcomes. *CNS spectrums*. 2007 Jan;12(S17):21-6.
3. Chaudri NA. Adherence to long-term therapies evidence for action.
4. Patel V, Flisher AJ, Hetrick S, McGorry P. Mental health of young people: a global public-health challenge. *The lancet*. 2007 Apr 14;369(9569):1302-13.
5. American Psychiatric Association. The American Psychiatric Association practice guideline on the use of antipsychotics to treat agitation or psychosis in patients with dementia. American Psychiatric Association; 2016 May 3.
6. Leucht S, Tardy M, Komossa K, Heres S, Kissling W, Salanti G, Davis JM. Antipsychotic drugs versus placebo for relapse prevention in schizophrenia: a systematic review and meta-analysis. *The Lancet*. 2012 Jun 2;379(9831):2063-71.
7. Thara R, Padmavati R, Srinivasan TN. Focus on psychiatry in India. *The British Journal of Psychiatry*. 2004 Apr;184(4):366-73.
8. National Collaborating Centre for Mental Health (UK). Psychosis and schizophrenia in adults: treatment and management.
9. Higashi K, Medic G, Littlewood KJ, Diez T, Granström O, De Hert M. Medication adherence in schizophrenia: factors influencing adherence and consequences of nonadherence, a systematic literature review. *Therapeutic advances in psychopharmacology*. 2013 Aug;3(4):200-18.
10. Ascher-Svanum H, Zhu B, Faries DE, Salkever D, Slade EP, Peng X, Conley RR. The cost of relapse and the predictors of relapse in the treatment of schizophrenia. *BMC psychiatry*. 2010 Jan 7;10(1):2.
11. Ascher-Svanum H, Zhu B, Faries DE, Salkever D, Slade EP, Peng X, Conley RR. The cost of relapse and the predictors of relapse in the treatment of schizophrenia. *BMC psychiatry*. 2010 Jan 7;10(1):2.
12. Lieberman JA, Stroup TS, McEvoy JP, Swartz MS, Rosenheck RA, Perkins DO, Keefe RS, Davis SM, Davis CE, Lebowitz BD, Severe J. Effectiveness of antipsychotic drugs in patients with chronic schizophrenia. *New England journal of medicine*. 2005 Sep 22;353(12):1209-23.