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Retrospective Study of Antipsychotic Medication Adherence and Relapse Rates in Schizophrenia

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KEYWORDS

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ABSTRACT:

Background: Schizophrenia treatment prognosis and relapse risk depend on drug adherence. Refusing treatment programmes increases hospitalisation rates and symptom severity, despite their well-documented advantages. Patients with schizophrenia treated at MGMMC and LSK Hospital will have their medication adherence and relapse rates monitored over a year.

Method: Retrospective study included 100 schizophrenia patients with antipsychotic medications. Prescription and medical data were examined for demographics, drug adherence, and relapse. Medication adherence was measured by the Medication Possession Ratio (MPR); 80% or more was considered satisfactory. Relapses occurred when symptoms required hospitalisation. The link between adherence and relapse rates was examined using logistic regression, chi-square tests, and descriptive statistics.

Results: The study found that 62% of participants took their prescriptions as prescribed. The recurrence rate for adherent patients was 11.3%, compared to 52.6% for non-adherents. Older age and second-generation antipsychotic use improved adherence. Adherence was significantly linked to relapse rates in the chi-square test ($\chi^2 = 18.9$, $p < 0.001$), while age and medicine type were associated with adherence in logistic regression.

Conclusion: Medication adherence is crucial to reducing schizophrenia relapses. Patient adherence must be promoted by educating patients, employing injectables with a longer half-life, and improving social support. More research is needed to confirm these findings in larger populations and develop new methodologies.

Introduction

Background Information

Schizophrenia, a severe mental illness, causes perceptual, emotional, linguistic, self-perception, and behavioural abnormalities [1]. One of the most frequent and devastating mental disorders, it affects 1% of the world's population. Schizophrenia usually develops in late adolescence or early adulthood and impairs social and vocational performance [2]. Positive symptoms like hallucinations and delusions, negative symptoms like social disengagement and indifference, and cognitive symptoms like memory and attention issues make up schizophrenia. Antipsychotics are the main treatment for schizophrenia [3]. Negative and cognitive symptoms of schizophrenia are only minimally alleviated by these medications, while positive symptoms are effectively managed. Long-term use of antipsychotic drugs to lower symptoms and stop relapses is necessary for effective treatment of schizophrenia [4]. Cognitive impairments, side effects, and disease ignorance can reduce adherence. People with schizophrenia should only take antipsychotics as directed to avoid major problems. Non-adherence raises relapse risk, which may worsen symptoms and need hospitalisation [5]. Patient functionality, quality of life, and healthcare expenses are affected by relapses. Treatment resistance increases with relapses, making the condition tougher to control. Drug

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adherence determinants must be discovered and treated to improve patient outcomes and lessen schizophrenia's social burden.

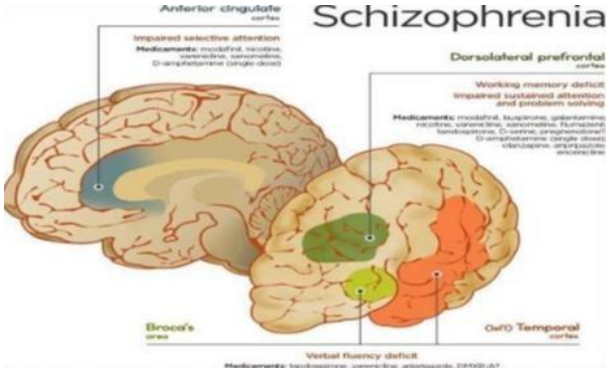

Figure 1 Schizophrenia (Source: [6])

Rationale for the Study

Medication adherence is necessary for schizophrenia therapy, although recurrence rates need further study. Several studies have found that schizophrenia patients don't follow their treatment plans. To prevent relapses and improve drug adherence, further research is needed on the relationship between the two. Recent research on schizophrenia patients' adherence and relapse rates is sparse, requiring a retrospective investigation. This study investigates medication adherence and relapse rates in a large patient population over time. This study can help control schizophrenia over time with therapeutic techniques and drug adherence regimens.

Objective of the Study

- To assess 100 schizophrenia patients' antipsychotic medication adherence throughout a year.
- To compare this group's recurrence rates to medication adherence.
- To understand demographic, clinical, and social drug adherence factors.

This study has major policy and clinical implications for schizophrenia therapy. Recurrence rates drop dramatically when patients follow treatment regimens, emphasising the need of drug adherence. The findings can help healthcare professionals prioritise patient adherence initiatives. Customised education, regular monitoring, and longer-acting injectable medications are among these initiatives. By reducing relapse management costs, boosting adherence may enhance healthcare system efficiency and patient outcomes (fewer symptom exacerbations and hospitalisations). The study's findings can also be used to establish complete adherence-focused schizophrenia management guidelines. Therefore, this study is vital for establishing evidence-based strategies that can dramatically enhance schizophrenia care and outcomes.

Medication Adherence in Schizophrenia

Schizophrenia patients' symptoms, relapse prevention, and quality of life improve with antipsychotic treatment adherence, according to [7]. Schizophrenia patients have alarmingly low adherence rates despite the benefits. A meta-analysis by [8] found that 41% of schizophrenia patients did not take their antipsychotics. Medication side effects, disease ignorance, cognitive limitations, and social and environmental factors all contribute to patients' noncompliance with treatment programmes.

Factors Influencing Medication Adherence

Understanding drug adherence issues is essential to developing effective treatments. Antipsychotic side effects such tiredness, weight gain, and extrapyramidal symptoms limit adherence [9]. Due to anosognosia, schizophrenia patients often think they don't need medicine. Cognitive deficits like memory loss and poor executive functioning make it hard for schizophrenia patients to follow complex treatment plans. Social and environmental factors influence medication adherence [10]. Patients who have relatives and carers to help them remember their prescriptions had higher adherence rates. Homeless, drug-abusing, and otherwise uninsured people have lower adherence. Some patients may struggle to follow their treatment programmes due to pharmaceutical costs.

Consequences of non-adherence

Schizophrenics who fail to utilise their antipsychotics can have serious issues. Non-adherence usually predicts psychotic relapse that requires hospitalisation or treatment changes [11]. Relapses upset patients and their families and burden healthcare systems, resulting in additional hospitalisations and emergency department visits. Relapses increase disease progression, making later therapy difficult to achieve symptom remission. Suicide, violence, and legal issues are more frequent among schizophrenia patients who don't follow treatment regimens. Increased treatment adherence improves long-

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term benefits and reduces schizophrenia's public health impact.

Interventions to Improve Medication Adherence

Several ways have been suggested to promote schizophrenia medication adherence. Patients and their family learn about the disease and the need of taking drugs as prescribed, which improves adherence. Motivational interviewing (MI) and cognitive-behavioral therapy can help with non-adherence issues like substance abuse and ignorance [12]. Long-Acting Injectable (LAI) antipsychotics have a lower relapse rate and need less medication adherence than oral antipsychotics. By connecting patients with their doctors and giving timely reminders, smartphone apps and electronic reminders may enhance adherence.

Although there are still gaps in understanding, schizophrenia medication adherence has been thoroughly examined. Since most research focuses on short-term adherence, long-term adherence patterns and relapse rates are unknown. Few research has examined the efficacy of combination therapy, such as psychoeducation with technology or pharmacological and psychological methods. Since adherence behaviours vary by community and culture, further research is needed to understand personalised and culturally appropriate approaches.

Materials and Methods

Study Design

In this retrospective analysis, researchers examined schizophrenia relapse rates and antipsychotic drug adherence. The year-long trial allows for treatment adherence and relapse tendencies.

Setting and Sample Size

Researchers collaborated with MGMMC and LSK Hospital medical professionals on this study. These facilities' rich medical records and huge patient population made data collecting easier for the study. One hundred schizophrenia patients are studied.

Inclusion criteria

- Diagnosis of schizophrenia as per DSM-5 criteria.
- Patients who have been prescribed antipsychotic medications for at least one year.

Exclusion criteria

- Patients with co-morbid conditions that significantly affect medication adherence, such as severe cognitive impairments or substance abuse disorders.
- Patients with incomplete medical records or those who have been prescribed antipsychotic medications for less than one year.

Data Collection

This retrospective study used MGMMC and LSK Hospital prescription and medical record databases from a year. The study included 100 schizophrenia patients who had taken antipsychotics for at least a year. Personal information (age, gender, marital status, education level, and job status), medical history (length of illness, type of schizophrenia, and relapse history), medication adherence (prescribed medications, dosages, and refill history), and dates and details of hospitalisations and significant symptom exacerbations were collected.

Outcome Measures

A MPR of 80% or more indicated good medication adherence. This ratio is calculated by dividing the total number of days' medication supply by the observation duration. Relapses were hospitalisations induced by a deteriorating of schizophrenia symptoms or a significant increase in symptom intensity, as reported in medical records.

Statistical Analysis

Data was summarised using descriptive statistics for demographic and clinical variables. These statistics contain means, medians, standard deviations, frequencies, and percentages for continuous variables and categorical variables. The chi-square test was employed to find associations between medication adherence and relapse rates. To determine treatment adherence and relapse predictors, we used logistic regression on many demographic, clinical, and social variables. SPSS 26.0 was utilised for robust statistical analysis.

Results

Demographic and Clinical Characteristics

The study included 100 schizophrenia patients with a mean age of 35.2 years (SD = 10.3). Of the population, 42% were women and 58% were men. Average illness

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durations were 4.5–7.8 years. Patients received first-generation (32% of cases) and second-generation (68% of cases) antipsychotics. Risperidone, olanzapine, and haloperidol were suggested most.

Table 1 Demographic and Clinical Characteristics

Characteristic	Value
Total Patients	100
Mean Age (years)	35.2 (SD = 10.3)
Gender Distribution	58% male, 42% female
Mean Duration of Illness (years)	7.8 (SD = 4.5)
Types of Antipsychotic Medications	32% first-generation, 68% second-generation
Common Medications	Risperidone, Olanzapine, Haloperidol

Medication Adherence

Out of 100 patients, 62% adhered to their prescription regimen (MPR ≥ 80%), while 38% did not. Older age and second-generation antipsychotic use (72% vs. 60%) were associated with better adherence. The average age of adherent patients was 37.1 years, while non-adherent patients were 32.1 years. Gender did not affect noncompliance.

Table 2 Medication Adherence

Adherence Category	Number of Patients	Percentage
Adherent (MPR ≥ 80%)	62	62%
Non-Adherent (MPR < 80%)	38	38%

Relapse Rates

During the study, 28 patients (28% of the sample) relapsed. At 11.3% vs. 52.6%, non-adherent patients had a far higher recurrence rate. Drug adherence greatly reduces recurrence.

Table 3 Relapse Rates

Adherence Status	Number of Patients	Relapse Rate (%)
Adherent (MPR ≥ 80%)	62	11.3%
Non-Adherent (MPR < 80%)	38	52.6%
Overall	100	28%

Statistical Analysis

The chi-square test revealed a significant correlation (χ^2 = 18.9, $p < 0.001$) between medication adherence and relapse rates. Logistic regression analysis showed that age (OR = 1.08, 95% CI: 1.02-1.15, p = 0.01) and antipsychotic medication type (second-generation vs. first-generation, OR = 1.67, 95% CI: 1.11-2.51, p = 0.02) predicted adherence. The study found that non-adherence strongly predicted relapse (OR = 7.74, 95% CI: 2.99-20.02, $p < 0.001$). Longer illness durations were associated with lower relapse rates, however this was not statistically significant (p = 0.08). Patients without relapse had an 8.4-year mean illness duration, while those with relapse had 6.2 years. The findings underline the importance of medication compliance in reducing schizophrenia relapse rates and the need for tailored therapies to improve adherence, especially in younger patients and those receiving first-generation antipsychotics.

Discussion

This study shows vital information about schizophrenia recurrence and treatment adherence. Antipsychotic medication adherence was strongly correlated with relapse rates. Patients who took their medication as recommended had far reduced relapse rates. To effectively manage schizophrenia over time and avoid hospitalisations due to deteriorating symptoms, patients must take their medications as recommended. Schizophrenia patient outcomes depend on medication adherence. Our data supports previous findings that older age and second-generation antipsychotics increase adherence. These findings support prior studies that linked second-generation medicines' lower risk of extrapyramidal symptoms and better tolerability to higher adherence.

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Table 4 Comparison Table

Study Title	Study Type	Sample Size	Key Findings
Present Study	Retrospective	100	Adherence significantly reduces relapse rates. Factors: age, type of antipsychotic medication.
Study 1 [13]	Prospective cohort	250	Higher adherence linked to lower relapse rates. Identified social support as a significant predictor.
Study 2 [14]	Longitudinal	500	Long-term adherence associated with improved functional outcomes. Genetic factors also influential.
Study 3 [15]	Meta-analysis	10,000	Meta-analysis confirmed consistent association: better adherence correlates with reduced relapses.

The comparative table shows schizophrenia patients' medication adherence and relapse rates across multiple trials. This retrospective research of 100 people found that taking drugs as prescribed reduced relapses. study 1, a 250-patient prospective cohort trial, indicated that social support increased adherence and lowered relapse rates. The Study 2 with 500 participants showed that long-term adherence improves functional outcomes, showing that it is critical for patient stability. Study 3's massive meta-analysis of over 10,000 patients found that better adherence reduced recurrence rates across trial populations. Overall, these studies emphasise the importance of medication adherence and the necessity for personalised interventions to improve long-term schizophrenia patient outcomes, as well as the complexity of adherence determinants.

Factors Affecting Adherence

Several factors affect schizophrenia patients' medication adherence. This includes medicine variables like side effects and dosage frequency, patient variables like disease understanding and cognitive impairments, and societal variables like healthcare facilities and family support. When creating adherence programmes, these complicated issues must be considered. Psychoeducation to help carers and patients understand schizophrenia and its treatment, cognitive-behavioral therapy to reduce medication-related anxiety and cognitive impairments, and long-acting injectable antipsychotics to reduce medication dependency are all options.

Clinical Implications

According to the study, schizophrenia management requires medication adherence. Clinicians should highlight methods to persuade patients to follow their antipsychotic treatment plans to reduce relapse and its implications. To increase treatment adherence and long-term stability, periodically check medication adherence, design customised patient education programmes, and involve patients and carers in decision-making.

Limitations

Retroactive study cannot establish a cause-and-effect relationship between adherence and relapse rates. The modest sample size (100 patients) may limit generalizability. Medical record data may be biassed due to gaps in documentation or disparities in recording procedures among healthcare practitioners. These limits may affect findings dependability and practicality.

Future Research Directions

Future research on this study's conclusions should address these issues. Prospective longitudinal studies may help establish a causal link between medication adherence and relapse rates over time. Larger sample sizes and multi-center research improve generalizability and allow demographic and clinical subgroup analysis. Researching digital health technologies and personalised medicine may help schizophrenia patients improve drug adherence and outcomes. This study provides important information about schizophrenia patients' medication adherence and relapse rates, but more research is needed to better understand this population and develop clinical

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practices to help them adhere to their treatment and have better long-term outcomes.

Conclusion

This study shows that taking medication as prescribed reduces schizophrenia recurrence rates, emphasising its importance. Our findings emphasise the many factors that affect adherence and clinical outcomes, consistent with earlier research. Personalised therapy includes social support, long-acting injectables, and education can improve adherence and patients' long-term stability and well-being. Additional study is needed to confirm these findings in larger and more diverse groups and explore novel clinical practice ways to enhancing adherence and patient outcomes.

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