

PRESCRIBING PATTERNS OF PSYCHOTROPIC DRUGS IN PATIENTS WITH SCHIZOPHRENIA IN A TERTIARY CARE HOSPITAL: A CROSS-SECTIONAL STUDY

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ABSTRACT

Background: Prescription pattern studies help assess the rational use of medicines in real-world clinical practice.

Objective: To describe psychotropic prescribing patterns and World Health Organisation and International Network for Rational Use of Drugs (WHO-INRUD) prescribing indicators among outpatients with schizophrenia. **Methods:** This cross-sectional observational study included 154 adults with DSM-5 schizophrenia attending the psychiatry outpatient department of Pt. B. D. Sharma PGIMS, Rohtak, Haryana. Prescription details were recorded and analysed descriptively. **Results:** The mean age was 45.75 ± 14.42 years; 80 participants (52.0%) were women. Second-generation antipsychotics accounted for 173 of 190 antipsychotic orders (91.05%) and olanzapine was the most frequently prescribed agent (104 orders, 54.74%). Two or more psychotropics were prescribed to 129 patients (83.8%), whereas high-level polypharmacy (five or more psychotropics) was seen

in one patient (0.64%). Antidepressants were used in 72 encounters, mainly selective serotonin reuptake inhibitors (67, 93.06%). The mean number of drugs per prescription was 2.65 and 97.98% of psychotropic drugs were prescribed by generic name. Injectable drug use was 1.30%, no fixed-dose combination was prescribed and 90.75% of psychotropic drugs were listed in the Government of Haryana Essential Drug List.

Conclusion: Second-generation antipsychotics, particularly olanzapine, dominated prescribing. The high use of generic and essential medicines was compatible with cost-conscious prescribing, while frequent psychotropic co-prescribing supports regular prescription review and metabolic monitoring.

KEYWORDS: Schizophrenia; Psychotropics; Prescribing pattern; WHO-INRUD indicators; Antipsychotics.

INTRODUCTION

Schizophrenia is a severe, long-term mental disorder that affects thought, perception, emotions and daily functioning. It is commonly associated with repeated illness episodes, social disability and a substantial need for continuing care.^[1,2]

Diagnosis is based on clinical criteria, including characteristic psychotic symptoms, their duration and associated functional impairment. Antipsychotic medicines remain central to treatment, but drug selection must be balanced against adverse effects, coexisting symptoms and adherence.^[3,4]

Second-generation antipsychotics are widely used because they generally cause fewer extrapyramidal adverse effects than first-generation agents. However, weight gain, dyslipidaemia and glucose abnormalities require regular physical and metabolic monitoring, especially during long-term treatment.^[5]

Drug-utilisation studies describe how medicines are used in routine practice and can identify potentially avoidable polypharmacy, low generic prescribing or limited use of essential medicines. The WHO-INRUD prescribing indicators provide a structured way to examine these patterns. Indian studies have reported variation in antipsychotic selection and use of concomitant psychotropics across treatment settings.^[6-9]

This study evaluated psychotropic prescribing patterns among outpatients with schizophrenia at a tertiary care hospital in Haryana, India. The primary objective was to describe prescribed medicines and WHO-INRUD indicators. The study also assessed use of fixed-dose combinations and high-level polypharmacy.

MATERIALS AND METHODS

Study design and setting

This observational, cross-sectional study was conducted jointly by the Departments of Pharmacology and Department of Psychiatry at Pt. B. D. Sharma Post Graduate Institute of Medical Sciences, Rohtak, Haryana, India. Recruitment and data collection were conducted over approximately 1 year during 2024-2025. The calculated sample size was 154 patients.

Participants

Adults aged 18 years or older with schizophrenia diagnosed according to DSM-5 criteria were enrolled consecutively after written informed consent. Patients with another psychiatric illness, chronic physical illness, pregnancy or lactation or psychoactive substance-use disorder other than tobacco use were excluded.

Data collection and outcome measures

Demographic data, socioeconomic information, anthropometric measures, past and current drug history, laboratory information and prescription details were recorded in a predesigned case record form. For each prescription, the drug name, generic or brand status, dose, frequency, route and duration were documented.

The main outcomes were the average number of drugs per encounter, percentage of drugs prescribed by generic name, percentage of encounters with psychotropics, percentage of encounters with injectables and percentage of medicines from the Government of Haryana Essential Drug List. Fixed-dose combination use and high-level polypharmacy, defined as five or more psychotropics for chronic disease management, were also assessed.^[6]

Data analysis

Data were coded, entered into Microsoft Excel and analysed using SPSS version 31. Continuous variables are presented as mean $\pm$ standard deviation and range. Categorical variables are presented as frequency and percentage. The analysis was descriptive; no inferential comparisons were reported.

Ethics

The study was approved by the Institutional Ethics Committee of Pt. B. D. Sharma PGIMS, Rohtak, before enrolment. Written informed consent was obtained from all participants and records were analysed without personal identifiers.

RESULTS AND DISCUSSION

Participant profile

A total of 154 outpatients with schizophrenia were analysed. Their mean age was 45.75 ± 14.42 years (median, 45 years). Women accounted for 80 participants (52.0%). Most participants were literate, married, from nuclear families and living in rural areas. The mean body mass index was 24.90 ± 4.01 kg/m², which supports the need to consider metabolic risk during treatment with antipsychotic medicines.

Table 1: Sociodemographic and Anthropometric Characteristics of Participants (n=154).

Characteristics	Value
Age (years)	45.75 ± 14.42 ; median 45
Body weight (kg)	67.35 ± 13.30
Height (cm)	164.24 ± 10.20
Body mass index (BMI)	24.90 ± 4.01
Women	80 (52.0%)
Men	74 (48.0%)
Literate	107 (69.48%)
Married	117 (75.97%)
Nuclear family	93 (60.39%)
Rural residence	85 (55.19%)
Annual family income below INR 1 lakh	106 (68.83%)

Values are mean $\pm$ standard deviation or n (%), unless otherwise stated.

Antipsychotic prescribing pattern

Second-generation antipsychotics accounted for 173 of 190 recorded antipsychotic orders (91.05%). Olanzapine was the most frequently prescribed antipsychotic, followed by risperidone, quetiapine and aripiprazole. Haloperidol was the only first-generation antipsychotic recorded. Of five paliperidone orders, two were injectable formulations.

Table 2: Antipsychotic Orders Recorded in the Study.

Class	Drug	Orders, n (%)
First-generation antipsychotic	Haloperidol	17 (8.95)
Second-generation antipsychotics	Olanzapine	104 (54.74)
	Risperidone	24 (12.63)
	Quetiapine	17 (8.95)
	Aripiprazole	15 (7.89)
	Clozapine	7 (3.68)
	Paliperidone	5 (2.63)
	Lurasidone	1 (0.53)
Total		190 (100.00)

Percentages use 190 antipsychotic orders as the denominator. Second-generation antipsychotics accounted for 173 orders (91.05%).

The preference for second-generation antipsychotics and the predominance of olanzapine are similar to patterns reported in several Indian tertiary-care studies. The low use of haloperidol may reflect a preference for agents with a lower risk of extrapyramidal adverse effects. However, the metabolic effects of second-generation agents remain important in follow-up care.^[7-10]

Psychotropic agent co-prescribing

Table 3: Concomitant Psychotropic Medicines Recorded in the Study.

Drug group	Drug	Orders, n (% within group)
Antidepressants (n=72)	Fluoxetine	32 (44.44)
	Sertraline	30 (41.67)
	Escitalopram	5 (6.94)
	Bupropion	5 (6.94)
Mood stabilisers (n=22)	Sodium valproate	18 (81.82)
	Lithium	4 (18.18)
Sedative-hypnotics (n=84)	Clonazepam	64 (76.19)
	Alprazolam	10 (11.90)
	Lorazepam	7 (8.33)
	Zolpidem	3 (3.57)
Other concomitant psychotropics	Melatonin	5
	Modafinil	5

Percentages are calculated within the named drug group when a group denominator was reported in the source data.

The frequent use of two or three psychotropics may reflect treatment of associated depression, anxiety, insomnia or behavioural symptoms. It should not be interpreted as evidence that all combinations are necessary; regular review remains important because antipsychotic polypharmacy can increase adverse effects, interactions and treatment burden.^[11]

Adjuvant medicines were also prescribed, including calcium with vitamin D, multivitamins, proton-pump inhibitors, vitamin E, bisacodyl, propranolol and trihexyphenidyl.

Table 4: Adjuvant Medicines.

Drug	Orders, n (%)
Calcium + Vitamin D	3 (5.26)
Multivitamin	7 (12.28)
Pantoprazole	3 (5.26)
Omeprazole	9 (15.79)
Vitamin E	2 (3.51)
Bisacodyl	3 (5.26)
Propranolol	11 (19.30)
Trihexyphenidyl	19 (33.33)
Total	57 (100.00)

WHO-INRUD prescribing indicators

Across 154 encounters, 408 medicines were prescribed, including 346 psychotropics. The mean number of medicines per prescription was 2.65 and the mean number of psychotropics was 2.25. High-level polypharmacy was uncommon. Generic prescribing was high, injectable use was low and no fixed-dose combination was recorded.

Table 5: WHO-INRUD Prescribing Indicators.

Indicator	Result
Total encounters	154
Total medicines prescribed	408
Total psychotropic medicines prescribed	346
Average medicines per prescription	2.65
Average psychotropics per prescription	2.25
Psychotropic drugs prescribed by generic name	97.98%
Encounters with an injectable	1.30%
Prescriptions with a fixed-dose combination	0%
Psychotropic drugs from EDL-GoH	90.75%
Patients receiving ≥ 2 psychotropics	77.92%
High-level polypharmacy (≥ 5 psychotropics)	0.0%

EDL-GoH: Essential Drug List, Government of Haryana. High-level polypharmacy was defined as five or more psychotropics.

Only two encounters included injectable paliperidone. This may be expected in an outpatient setting, but long-acting injectable antipsychotics may be useful for selected patients with adherence difficulties. Prescribing mainly by generic name and using medicines listed in the state essential-drug list can reduce cost for patients who rely on public services. These descriptive findings do not establish the appropriateness of individual regimens; regular review of medicine combinations and metabolic monitoring remain important.

Clozapine was recorded in seven orders and was used less frequently than other second-generation antipsychotics. Its limited use is understandable because it is generally reserved for treatment-resistant schizophrenia and requires regular haematological monitoring. Long-acting injectable antipsychotics can reduce relapse in selected patients, but their use must consider access, cost and patient preference.^[4,12]

Study limitations

This was a single-centre, outpatient, cross-sectional study with descriptive analysis. The findings may not represent prescribing in other hospitals or inpatient settings and the design cannot assess clinical response, adverse effects, adherence or long-term outcomes. Larger multicentre studies with follow-up would provide a more complete view of prescribing quality and patient outcomes.

CONCLUSION

Second-generation antipsychotics, particularly olanzapine, were the main drugs prescribed to outpatients with schizophrenia in this study. Psychotropic co-prescribing was common, but high-level polypharmacy was not observed in any patient. The high proportion of generic prescribing, low use of injectables, and absence of fixed-dose combinations describe a pattern compatible with cost-conscious prescribing. Regular review of concomitant medicines, careful selection of patients for long-acting injectable therapy and routine metabolic monitoring are important, especially when olanzapine is used for long periods.

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