

# Psychotropic drug prescription practice in psychiatric out-patients in a tertiary care hospital

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## Abstract

**Background:** Psychotropic drugs play pivotal role in psychiatric care. Prescription patterns explain the extent and profile of drug use, trends, quality of drugs and compliance with regional, usage of drugs from essential medicine list. **Aim:** To analyze the psychotropic drug prescription practice in psychiatric out-patients of a tertiary care teaching hospital. **Material and Methods:** A total of 700 prescriptions of psychiatric outpatients which fulfilled the inclusion criteria were evaluated. Prescription was collected by an independent person by clicking its picture with mobile phone outside the OPD without the knowledge of prescriber to avoid any bias. Basic indicators referred to as core indicators were used as measure of performance in three general areas related to rational use of drugs. **Results:** In 700 prescriptions studied, 1752 (95.2%) psychotropic drugs were prescribed, frequency ranging from 26.7% to 0.06%. Olanzapine was prescribed maximum number of times (26.7%), followed by lorazepam (13.4%) and amisulpride (10.2%). Anti-psychotic class of drugs were most commonly prescribed (41.7%), followed by anti-anxiety (27.6%), mood stabilizer (12%), anti-depressant (10.8%). 387 (22%) psychotropic drugs were prescribed from essential drugs list. **Conclusion:** The most common group of psychotropic drug prescribed was antipsychotic with prescription trends towards atypical antipsychotics. Olanzapine, an atypical antipsychotic was the most common drug prescribed for schizophrenia.

**Key Words:** Psychotropic drugs, prescription practice, psychiatric out-patient, WHO indicators.

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Received Date: 14/07/2018 Revised Date: 03/08/2018 Accepted Date: 20/09/2018

DOI: <https://doi.org/10.26611/1010811>

## Access this article online

Quick Response Code:



Website:

[www.medpulse.in](http://www.medpulse.in)

Accessed Date:

01 October 2018

## INTRODUCTION

Psychotropic drugs play pivotal role in psychiatric care. For the treatment of psychiatric disorders, wide arrays of psychotropic drugs are available. Although, new psychotropic medications have a remarkable impact on psychiatric practice, their utilization and a consequence on real life effectiveness and safety in actual clinical practice needs continuous review of assessment. In this context, the rational use of psychotropic drugs and appropriate methods to monitor the drug prescribing

pattern becomes very essential.<sup>1</sup> Prescription patterns explain the extent and profile of drug use, trends, quality of drugs and compliance with regional, state or national guidelines like standard treatment guideline, usage of drugs from essential medicine list and use of generic drugs. Without knowledge of how drugs are being prescribed and used, it is difficult to initiate a discussion on rational drug use and to suggest measures to improve prescribing habits. There are many studies which have evaluated the drug prescribing pattern and safety profile in psychiatric patients from India.<sup>2,3</sup> However, there is paucity of data regarding prescribing pattern in psychiatric disorders from this part of our country. Therefore, the present study was conducted to analyze the psychotropic drug prescription practice in psychiatric out-patients of a tertiary care teaching hospital.

## MATERIAL AND METHODS

This cross-sectional, one-point analysis was conducted in a tertiary care hospital after obtaining necessary approval from the Institutional Ethics Committee. All the principles of bioethics were adopted, informed verbal

**How to cite this article:** Rashmi Sharma, Brij Mohan Gupta, Rakesh Banal. Psychotropic drug prescription practice in psychiatric out-patients in a tertiary care hospital. *MedPulse International Journal of Pharmacology*. October 2018; 8(1): 01-04.  
<https://www.medpulse.in/Pharmacology/>

consent of the patient or Legally Acceptable Representative (LAR) was taken as the present study falls under Category C, with no risk to the patient and was an observational study. A total of 700 prescriptions of psychiatric outpatients which fulfilled the inclusion criteria were evaluated. Prescription was collected by an independent person by clicking its picture with mobile phone outside the OPD of Psychiatric Diseases Hospital without the knowledge of prescriber to avoid any bias. The name of the drug was used by generic name. Name of the prescriber and name of the patient was coded for all practical purposes to avoid any conflict of interest.

**Inclusion Criteria**

- Aged 18 to 60 years
- Patients of both genders
- Patient/LAR who gives consent
- No organic disorder

**Exclusion Criteria**

- Age group < 18 years or > 60 years
- Revisit was excluded
- Organic disorders
- Indoor psychiatric patients

Data collected from the prescriptions was entered in the predesigned proforma especially prepared from the World Health Organization (WHO) guidelines on how to investigate drug use in health facilities. Basic indicators referred to as core indicators were used as measure of performance in three general areas related to rational use of drugs.<sup>4</sup>

**Statistical Analysis:** The data collected was tabulated, interpreted and analyzed as numbers and percentage and presented with the help of appropriate tables and diagrams.

**RESULTS**

According to DSM IV classification, schizophrenia was diagnosed in 46.14% patients, bipolar disorder in 24% and major depressive disorder in 18.57%. Brief psychotic episode and substance related disorders were diagnosed in 2.14% patients each. Other diagnoses were panic disorder (1.57%), obsessive compulsive disorder (1.28%), adjustment disorder (1%), post-traumatic stress disorder and generalized anxiety disorder (0.71% each). There were cases of conversion disorder (0.57%), postpartum psychosis and sleep disorder (0.42% each), and schizoaffective disorder (0.28%). In 700 prescriptions studied, 1752 (95.27%) psychotropic drugs were prescribed, frequency ranging from 26.71% to 0.06%. Olanzapine was prescribed maximum number of times (26.71%), followed by lorazepam (13.41%), amisulpride (10.21%), sodium valproate (9.82%), diazepam (6.96%) and clonazepam (5.65%) (Table 1).

**Table 1: Frequency of Psychotropic Drugs Prescribed**

SN	Psychotropic Drugs	n (%)
1	Olanzapine	468 (26.71)
2	Lorazepam	235 (13.41)
3	Amisulpride	179 (10.21)
4	Sodium valproate	172 (9.82)
5	Diazepam	122 (6.96)
6	Clonazepam	99 (5.65)
7	Paroxetine	86 (4.91)
8	Quetiapine	75 (4.28)
9	Lithium	40 (2.28)
10	Escitalopram	33 (1.88)
11	Alprazolam	24 (1.37)
12	Carbamazepine	14 (0.80)
13	Sertaline	14 (0.80)
14	Fluoxetine	12 (0.68)
15	Other	179 (10.21)
	<b>Total</b>	<b>1752</b>

Thus, average number of psychotropic drugs per prescription = Total number of psychotropic drugs prescribed ÷ Number of prescriptions studied = 1752 ÷ 700 = 2.50. Anti-psychotic class of drugs were most commonly prescribed (41.74%), followed by anti-anxiety (27.67%), mood stabilizer (12.04%), anti-depressant (10.85%), vitamins and minerals (3.37%), anticholinergic (1.50%) and analgesic and anti-inflammatory (1.09%). Other pharmacological classes included sedative hypnotic, proton pump inhibitor, antiemetic, laxative, anti-hypertensive, oral hypoglycemic drug, anti-migraine and thyroid hormone. A total of 387 (22.09%) psychotropic drugs were prescribed from essential drugs list (Table 2).

**Table 2: Drugs Prescribed According to Pharmacological Class**

Class of Drugs Prescribed	n (%)
<b>Psychotropic drugs</b>	
Anti-psychotic	804 (41.74)
Anti-anxiety	533 (27.67)
Mood Stabilizer	232 (12.04)
Anti-depressant	209 (10.85)
Sedative Hypnotic	9 (0.47)
<b>Non-psychotropic drugs</b>	
Vitamins and Minerals	65 (3.37)
Anticholinergic	29 (1.50)
Analgesic and Anti-inflammatory	21 (1.09)
Proton Pump Inhibitor	9 (0.47)
Antiemetic	7 (0.36)
Laxative	3 (0.15)
Anti-Hypertensive	2 (0.10)
Oral Hypoglycemic Drug	1 (0.05)
Anti-migraine	1 (0.05)
Thyroid Hormone	1 (0.05)
<b>Total</b>	<b>1926 (100)</b>

## DISCUSSION

Study of prescription patterns is an essential tool to study rational use of drugs. WHO developed core prescribing indicators that allow researchers to make basic comparisons between situations in different areas or at different times. These indicators include prescribing indicators, patient care indicators and healthcare indicators.<sup>4</sup> This study comprehensively evaluated the core indicators recommended by WHO (1993), with the hope that data generated from the study will be highly beneficial to minimize irrational psychotropic drug prescribing and may suggest modifications in prescribing pattern of psychotropic drugs to minimize the adverse effects to safeguard patient's safety. In the present study, a total number of 1752 psychotropic drugs with a range of 1 to 5 were prescribed, average being 2.50. Piparva KG *et al* carried out a prospective cross-sectional study to analyze the pattern of drug utilization of psychotropic medications in outdoor patients and reported psychotropic drugs prescribed per patient to be 2.96.<sup>5</sup> Rode SB *et al* studied prescribing trends of psychotropic drugs and observed average number of psychotropic drugs per prescription to be 2.1.<sup>3</sup> Sabahi A *et al* assessed the pattern and utilization of psychotropic drug prescriptions and found the mean number of drugs per prescription reported was 2.9.<sup>6</sup> The results of these studies are in consonance with our study. However, Thakkar KB *et al* reported average number of psychotropic drugs per prescription to be 1.79, which is on lower side as compared to our study.<sup>7</sup> In the present study, a total of 1839 drugs were prescribed in 700 prescriptions that were part of one-point analysis. Olanzapine was prescribed maximum number of times (25.49%), followed by lorazepam (12.78%), amisulpride (9.73%), sodium valproate (9.35%), diazepam (6.63%) and clonazepam (5.38%). There were 61 other drugs with frequency varying from 4.68% to 0.05%. Banerjee I *et al* also found that olanzapine was the commonest antipsychotic drug to be prescribed (34.3%).<sup>8</sup> Similarly, Grover S *et al* reported olanzapine as the most commonly prescribed antipsychotic (42.9%) followed by risperidone (26.7%), amisulpride (11.6%) and quetiapine (8.9%).<sup>9</sup> Paul PK *et al* also observed that commonest antipsychotics given was olanzapine (51.04%), followed by risperidone (17.14%), chlorpromazine (13.14%) and aripiprazole (6.57%).<sup>10</sup> Tripathi A *et al* also found Olanzapine (10.26%) was the most commonly prescribed antipsychotic followed by risperidone (2.56%), trifluoperazine (1.92%) and quetiapine (1.60%).<sup>11</sup> Thakkar KB *et al* reported trifluoperazine as the most commonly used antipsychotic followed by chlorpromazine, haloperidol and risperidone.<sup>7</sup> Commonest psychotropic drugs prescribed according to class were antipsychotic

(41.74%), followed by anti-anxiety (27.67%), mood stabilizers (12.04%), anti-depressants (10.85%). Commonest anti-anxiety drug was lorazepam (13.41%). Commonest mood stabilizer was sodium valproate (9.82%), commonest antidepressant being paroxetine (4.91%) and commonest anticholinergic as trihexyphenidyl. Sarkar P *et al* also observed antipsychotic drugs were most frequently prescribed followed by tranquilizers/hypnotics and anticholinergics.<sup>12</sup> In the study by Rode SB *et al* the prescribing frequency of anxiolytics, anti-depressants, anti-psychotics, anti-cholinergics, and anti-mania drugs was 30.04%, 25.46%, 25.37%, 11.54%, and 7.6%, respectively.<sup>3</sup> In the study of Tripathi A *et al* escitalopram was the commonest anti-depressant (36.54%). Clonazepam was the most commonly used anti-anxiety drug (37.18%), olanzapine (10.26%) most commonly prescribed antipsychotic and lithium carbonate (3.85%) being most common mood stabilizer.<sup>11</sup> These results are in part similar to our study. In the study by Shankar PR and Roy S, frequency of anti-depressants, anxiolytics, anti-psychotics and anti-mania drugs was 45.94%, 19.41%, 8.6% and 1.96% respectively, which is not in accordance with the present study.<sup>13</sup> Moore S *et al* reported antidepressant drugs as most prescribed (59.8%) followed by antipsychotic drugs (50.8%).<sup>14</sup> The most common class of psychotropic drugs as found by Shamkuwar CA *et al* were anti-anxiety in 36.1% and antidepressants in 13% prescribed for various psychiatric disorders. These included sedative hypnotics (10.4%), anti-psychotics (9%) and anticonvulsants (8%).<sup>15</sup> Sabahi A *et al* reported antidepressants (61.0%) as the most frequently prescribed followed by antipsychotics (29.5%), sedative/hypnotics or anti-anxiety drugs (27.5%) and mood stabilizers (18.5%).<sup>6</sup> Thakkar KB *et al* observed 1074 (88.25%) psychotropic drugs in 600 prescriptions. Most commonly prescribed drugs were trifluoperazine + trihexyphenidyl (63.9%), carbamazepine (17.2%), amitriptyline (34.9%), and diazepam (23.8%).<sup>7</sup> The results are not in agreement with our study. Jena M *et al* studied the pattern of 4800 prescription of psychotropic drugs and reported that frequency of administration of trihexyphenidyl (66.82%) was more, followed by sodium valproate (57.30%), escitalopram (45.42%), clonazepam (39.50%) and olanzapine (28.98%).<sup>16</sup> Rode SB *et al* reported 1092 psychotropic drugs in their study. Clonazepam, olanzapine, escitalopram, carbamazepine and trihexyphenidyl were the most commonly prescribed psychotropic drugs.<sup>3</sup> In the above studies, no similarity has been found regarding frequency of psychotropic drugs prescribed. The reason being that in all these studies class of patients was different from that of the present study.

## CONCLUSION

In the present study, the most common group of psychotropic drug prescribed was antipsychotic with prescription trends towards atypical antipsychotics. Olanzapine, an atypical antipsychotic was the most common drug prescribed for schizophrenia. Majority of these drugs were prescribed orally, with injectables well within limits proposed by WHO. Prescription patterns vary between settings based on the prescribers, patients, and system factors.

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Source of Support: None Declared  
Conflict of Interest: None Declared