



# **To Identify Patterns of Drug Usage among Patients Who Seek Care in Psychiatry Outpatient Department of a Tertiary Care Hospital in Srinagar, Jammu and Kashmir, India**

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## **Authors' contributions**

*Each of the researchers worked together to complete this study. The research was planned by authors MZ and RM, but it was carried out by authors MM and IA, who also performed all of the statistical analysis. The final version of the article was read and accepted by all of the contributors.*

## **Article Information**

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## **ABSTRACT**

**Background:** An examination of drug use is done in a particular setting, searching for drug use that isn't fair. At the population level, the use of psychotropic drugs for mental illness can be an effective way of identifying and tracking the level of treatment for these conditions. They also provide information on ethical drug use, informed by the currently available information on a medication's benefits and risks.

**Objective:** A major objective of the research was to gather data on patterns of drug use in the psychiatry outpatient department of a tertiary care hospital in Srinagar, Jammu & Kashmir, India.

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**Methodology:** The drug use research was performed in a tertiary care hospital in Srinagar, Kashmir, India, in a psychiatry outpatient clinic. This research was observational, cross-sectional, and open-ended in nature. All patients who attended the Psychiatry OPD and fulfilled the inclusion criteria over the course of a six-month cycle were included in the study.

**Results:** Over a period of six months, 600 patients from the psychiatry outpatient department of a tertiary care hospital in Srinagar, Jammu & Kashmir, India were assessed. All patients were classified into seven age groups: up to 14 years old (A), 15 to 25 years old (B), 26 to 35 years old (C), 36 to 45 years old (D), 46 to 55 years old (E), 56 to 65 years old (F), and over 65 years old (G). Clonazepam was the most commonly prescribed medication (152 cases), followed by olanzapine (132 cases), lorazepam (105 cases), and escitalopram (92 cases).

**Conclusion:** Measuring drug use in treatment centres not only explains drug use rates and prescribing behaviour, but it also helps in the identification of causes of polypharmacy and the problems associated with it. Making a habit of setting standards and gauging the quality of clinical treatment using performance feedback should become standard clinical protocol.

*Keywords: Drug utilization; psychiatric settings; antidepressants; polypharmacy.*

## 1. INTRODUCTION

The use of rational medications necessitates a patient-centered approach. Identification of a patient's major health problem(s), selection of the appropriate medication, dosage type, and route of administration, prediction of possible adverse effects and drug interactions, and avoidance of unnecessary or harmful duplication therapy are all important factors in treatment success. The capacity of the pharmacy and nursing departments to prepare and administer prescriptions is also essential for rational drug use. The use of hospital drug formulary programmes helps with treatment optimization, vital medication availability, and therapy cost control. The basis for rational drug use is the drug formulary. On the other hand, the existence of a rationally derived list of drugs licensed for procurement and use in a hospital does not guarantee that they are correctly prescribed and used. Drug utilization analysis programmes can occur without other formulary activities, despite the fact that they are often considered a part of a drug formulary scheme [1].

Mental disorder is one of the leading causes of morbidity. Treatment paradigms have shifted as a result of newer drugs including selective serotonin reuptake inhibitors (SSRIs) and atypical antipsychotics. Various factors affect drug therapy selection and, also, the outcome, such as medication rates, local paradigms, and so on. Psychiatric disorders are a significant public health issue. Four of the top ten health conditions that lead to Disability Adjusted Life Years are psychiatric issues (DALYs). Mental illness is linked to high health care use and costs, which are borne mostly by the patients

and their caregivers in developing countries. Psychotropic drugs are used to treat a wide variety of mental illnesses. Over the past two decades, the introduction of newer drugs such as selective serotonin reuptake inhibitors (SSRIs) and atypical antipsychotics have drastically changed drug treatment procedures. The growing concern about the burden of mental illness in health statistics emphasizes the importance of rational psychotropic drug prescribing. Psychotropic drugs have had a huge impact on medical practice. However, their effectiveness and safety in real-life conditions, as well as their use in clinical practice, require ongoing studies [2-6]. This study was carried out to evaluate drug utilization pattern in the psychiatry outpatient department of a Tertiary care hospital, Srinagar, Jammu & Kashmir, India.

## 2. METHODOLOGY

The research was carried out in a psychiatry outpatient clinic at a tertiary care hospital in Srinagar, Jammu and Kashmir, India. The study's design was observational, cross-sectional, and open-ended in nature. During a 6-month period, all patients who visited the Psychiatry OPD were included in the study. Patients attending psychiatry department of all ages and both sexes were included for the study. Data from the outpatients' register which were found to have convulsions, critical illness, unconsciousness and those with incomplete data were excluded. Following information for each patient were recorded on a data entry form designed in mutual consultation with the clinician: Patient's name, age, sex, identification number, Drugs prescribed (Generic / Branded), Strength of drugs prescribed and frequency of

administration, Dosage form, Route of administration and Duration of medication. The prescribing indicators as well as the complementary indicators recommended by the WHO were used to assess the drug utilization pattern. Descriptive statistics were used to interpret the results. As required, the results were presented as mean SEM and percentages. The drug and patient characteristic results were calculated using MS Excel 2007 and the SPSS 16.0 statistical kit. Statistical tests (Fisher's exact test, Student's t-test, and One Way Analysis of Variance, ANOVA) were used to evaluate the relationship between variables. The difference was considered significant if the P value was less than 0.05.

### 3. RESULTS

Over a period of six months, 600 patients from a psychiatry outpatient department of a Tertiary care hospital in Srinagar, Jammu & Kashmir, India were evaluated.

#### ❖ Profile of the patients

Out of the 600 patients 61.6% (370) were male and 38.3% (230) were female.

**Table 1. Age distribution of the patients**

Age (In years)	Patients		
	Total (n=518)	Male (n=370)	Female (f=230)
upto 14	46	30	16
15_25	184	108	76
26_35	158	109	49
36_45	100	55	45
46_55	55	32	23
56_65	33	18	15
Above 65	24	18	6

All the patients were divided into seven age groups: 14 to 25 years old (A), 26 to 35 years old

**Table 3. Distribution of Average number of medications per prescription among different age groups**

Age group (in years)	Distribution of number of medications	
	No. of Drugs	Mean±SEM
upto 14	89	1.76 ± 0.14
15_25	349	1.85 ± 0.05
26_35	317	1.96 ± 0.06
36_45	207	2.01 ± 0.08
46_55	114	1.95 ± 0.11
56_65	73	2.05 ± 0.19
above 65	51	2.30 ± 0.30

(B), 36 to 45 years old (C), 46 to 55 years old (E), 56 to 65 years old (F), and over 65 years old (G).

#### ❖ Prescribing indicators

To see whether there were any discrepancies in prescribing between the age groups, the prescribing metrics were measured for all of the patients and for the different age groups.

**Table 2. Distribution of number of medication per prescription**

	No. of drugs	for males	for females
All drugs	1200	657	543
Psychotropic drugs	1136	724	412

#### ❖ Percentage of medicines prescribed from WHO EML

Just 260 (21.66 percent) of the 1200 medicines prescribed were from the WHO Essential Medicine List (EML) 2009 16th edition. Lorazepam, fluoxetine, and amitriptyline were the most commonly prescribed drugs from the WHO List of Essential Medicines.

#### ❖ Percentage of medicines prescribed by generic name

Majority of drugs were prescribed by brand names. This could be due to non availability of generics in hospital and also in retail pharmacies.

#### ❖ Percentage encounter with an injection prescribed

Use of injection was very low and was prescribed in only 7 cases and majority of them were depot preparations.

**Table 4. Average number of medication per prescription**

No of drugs per prescription	No of prescriptions (%)
1	99 (16.33)
2	323 (53.30)
3	134 (22.11)
4	50 (8.25)
Total	606

**Table 5. Prescribing frequencies of selected drug categories**

Drug category		Number of patients with % of population	
		Total (n=600)	%
Psycholeptics	Anxiolytics	293	48.83
	Hypnotics and Sedatives	64	10.66
	Antipsychotics	Atypical 231 classical 62	38.5 10.33
Psychoanaleptics	Antidepressants	TCA	42 7.0
		SSRI	204 34.0
		SNRI	20 3.33
		NDRI	24 4.0
		NaSSA	25 4.16
		other	11 1.83
		Antidepressant with Psycholeptics	25 4.16
Other nervous system drugs	Anti_dementia drugs	18	3.0
	Psychostimulants	17	2.83
	Anticholinergic/Dopaminergic agents	63	10.5
	Mood stabiliser and Anticonvulsant	31	5.16
Non_Psychotropic Drugs	Antivertigo preparations	6	1.0
	Vitamins	33	5.5
	Others	31	5.16

*TCA = Tricyclic antidepressant*

*SSRI = Selective serotonin reuptake inhibitor*

*SNRI = Selective noradrenaline reuptake inhibitor*

*NDRI = Noradrenaline – dopamine reuptake inhibitor*

*NaSSA = Noradrenaline and specific serotonin reuptake inhibitor*

#### ❖ Diagnostic characteristics of the patients

The diseases encountered in the present study were organized according to International Classification of Diseases (ICD\_10).

#### ❖ Top ten medicines prescribed

Clonazepam (152 cases), olanzapine (132 cases), lorazepam (105 cases), and escitalopram\_92 cases were the most commonly prescribed medications. A total of 83 medications were prescribed, with 67 of them being psychotropic and the other 16 being non-

psychotropic. 9 of the 67 psychotropic drugs studied were combination preparations. Non-psychotropic medications such as multivitamin preparations and antiulcer drugs are at the top of the list with 39 cases each. Combination drugs made up 6.5 percent of all drugs, accounting for 78 out of 1200.

## 4. DISCUSSION

In the current research, it was discovered that two medications were prescribed in the majority of prescriptions (53.30%). Since the mean number of prescriptions in the current study was less than two, the probability of ADRs due to

drug reactions and prescribing errors with polypharmacy was low. Combination preparations accounted for 6.5 percent of the medicines used, and the WHO important medicine list accounted for 21.66 percent (260 drugs). Brand names were used to administer all of the medications. There are areas of concern that prescriber education will help to address to some degree. The benefits of using combination preparations, such as ease, improved enforcement, and lower costs, are all valid in the department. Since the drugs on the list of essential medicines are both therapeutically and economically efficient, this is a crucial field where progress can lead to more cost-effective and reasonable drug therapy. Injections were only prescribed in seven occasions, the majority of which were depot preparations. The cost of the medication, especially in developing countries, is an important factor in deciding treatment adherence. Compliance is a factor that must be considered when interpreting the outcomes of a particular procedure. Because of the long time of treatment and the high degree of non-compliance in psychiatry, this is particularly true (20-50 percent) [7]. Previous studies had suggested that women received more psychotropic medications than men [8,9]. However, no gender gaps were discovered in our research. Clonazepam (152 cases), olanzapine (132 cases), lorazepam (105 cases), and escitalopram (92 cases) were the most commonly prescribed medications. A total of 83 medications were prescribed, with 67 of them being psychotropic and the other 16 being non-psychotropic. 9 of the 67 psychotropic drugs studied were combination preparations. Non-psychotropic medications such as multivitamin preparations and antiulcer drugs are at the top of the list with 39 cases each. Combination drugs made up 6.5 percent of all drugs, accounting for 78 out of 1200. In this research, selective serotonin reuptake inhibitors (34.0 percent) were the most commonly prescribed antidepressants, which is consistent with other research [2,10]. In a study in Canada [10] SSRIs (17.5%) were the most frequently prescribed antidepressants followed by venlafaxine (7.4%). In the same study, sedatives and hypnotics were prescribed in 3.1% of the population while in the present study they accounted for 10.66% [10].

## 5. CONCLUSION

Drug use assessment in health-care facilities not only recognizes drug use patterns and prescribing behaviour, but it also helps in the identification of factors that lead to polypharmacy

and the problems that come with it. Study shows low incidence of polypharmacy which is good as polypharmacy is common in psychiatry. There is scope for improvement in case of medicines prescribed by generic name. The prescribing pattern from all the psychiatrists were found to be rationale. In clinical practice, setting standards and assessing care quality by performance evaluations should become routine. Our findings, along with those of other studies in India and other countries, showed minor but not major differences in the number of drugs prescribed per prescription. In the prescription of certain psychotropic medications, however, there were certain conflicts of interest. There is a need for more research into patient commitment to treatment and the rate of clinical treatment dropout. Prescription audit research on psychotropic drugs can be conducted to see whether any changes in prescribing practices are needed.

## DISCLAIMER

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

## CONSENT

Prior consent was taken from patients while collecting the data.

## ETHICAL APPROVAL

The study was approved by the Institutional Ethics Committee.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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