Original Article

A Study of Psychotropic Drugs Being Prescribed to the Patients Attending the Psychiatric Outpatient Department in a Tertiary Care Hospital

Adit Atul Deshmukh[1] **Sangeeta Sanjay Dabhade[2*]** Balasaheb Baburao Ghongane[3]

1. Lecturer, Department of Pharmacology, B. J. Government Medical College and Sassoon General Hospital, Pune, Maharashtra, India
2. Associate Professor, Department of Pharmacology, B. J. Government Medical College and Sassoon General Hospital, Pune, Maharashtra, India
3. Ex– Professor and Head, Department of Pharmacology, B. J. Government Medical College and Sassoon General Hospital, Pune, Maharashtra, India

***Correspondence to**: Sangeeta Sanjay Dabhade
sangeetadr99@gmail.com

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Abstract

***Background and purpose*:** Drug utilization research evaluates the appropriateness of the prescriptions which is important in clinical practice. Psychotropic polypharmacy is a major problem in psychiatric practice, which can lead to the development of adverse effects of those drugs in patients. Therefore, this study was carried out to evaluate the utilization of psychotropic drugs being prescribed for various psychiatric illnesses.

Material and Methods: A prospective, cross sectional, observational study was carried out in patients visiting the Psychiatric Out-Patient Department of B J Government Medical College and Sassoon General Hospital, Pune, India; from December 2016 to May 2018. A total of 500 prescriptions were analysed using WHO Drug Use indicators and some other indicators.

***Results*:** Average number of drugs per prescription was 3.14 ± 1.18; while average number of Psychotropic drugs per prescription was 2.27 ± 0.90. 84.35% of the total drugs prescribed by Generic name. 43.89% and 41.67% of the total drugs were prescribed from National List of Essential Medicines 2015 and WHO Model List of Essential Medicines 2017, respectively. Antipsychotics was the most commonly prescribed group of Psychotropic drugs, while Olanzapine was the most commonly prescribed Psychotropic drug. 64.25% of the total drugs were prescribed from the hospital drugstore.

***Conclusion*:** In the present study, drugs were prescribed rationally and judiciously. But there was a need to increase the prescription of drugs from essential drug lists. Apart from that, there was found a need to increase the availability of the commonly prescribed Psychotropic drugs in the hospital drugstore of the study institution.

***Keywords*:** Drug Utilization; Psychotropic Drugs; Olanzapine; Prescriptions

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1. Introduction

Drug Utilization Research (DUR) was defined by the World Health Organization (WHO) in 1977 as "the marketing, distribution, prescription, and use of drugs in a society, with special emphasis on the resulting medical, social, and economic consequences" (1). DUR research evaluates the appropriateness of the prescriptions, which is important in clinical practice as it provides the clear picture of the utilization pattern of various drugs, and allows identifying areas that need change and improvement (2). A report of WHO shows that more than half of drugs are ordered, or dispensed inappropriately. Such inappropriate drug use can lead to the adverse clinical consequences of the treatment. That is why the study of these prescription patterns is important to improve good prescribing habits (3). The increased interest in DUR has resulted from recognition of the virtual explosion in the marketing of new drugs, the wide variations in the patterns of drug prescribing and consumption, and the increasing concern about the cost of drugs (4). Psychiatry is a branch of medicine that deals with mental, emotional or behavioural disorders (5). Mental disorders or Psychiatric disorders form an important public health problem. Of the top ten health conditions contributing to the Disability Adjusted Life Years (DALYs), four are psychiatric disorders (6). Research findings indicate that 30 percent of the global population has a mental disorder each year (7). Mental illness is associated with high levels of utilization of healthcare services and associated costs of the treatment, which are mostly paid by the patients themselves in developing countries (6).

Psychotropic drugs or Psychopharmacological agents are those having primary effects on psyche (mental processes) and are used for treatment of psychiatric disorders (8). For the treatment of psychiatric disorders, diverse types of psychotropic drugs are available (4). During the past two decades, the development of newer drugs like Selective Serotonin Reuptake Inhibitors (SSRIs) and atypical anti–psychotics have drastically changed the drug therapy protocols (5). The literature defines Psychotropic polypharmacy as the concurrent prescription of two or more psychiatric drugs to a patient. Psychotropic polypharmacy is a major problem in psychiatric practice, which can lead to development of adverse effects of those drugs in patients (9). Taking all these facts into consideration, the present study was undertaken with the aim to study and analyse the pattern of drug utilization of the Psychotropic medications prescribed to the patients attending the Psychiatry outpatient department of a tertiary care teaching hospital.

2. Materials and Methods

A prospective, cross-sectional, observational study was carried out in the patients visiting the Psychiatry Out-Patient Department (OPD) of B.J Government Medical College and Sassoon General Hospital, Pune, India from December 2016 to May 2018. The current study was initiated after obtaining permission from the Institutional Ethics Committee (IEC) [BJGMC/IEC/Pharmac/D-0916122-122].

All the data collected as a part of this study was kept strictly confidential and used for the purpose of this study only.

As it was a study in Psychiatric patients, Written Informed Assent was obtained from the sane guardian/relatives of the patients, instead of patients themselves, before the recruitment of the patients in the study.

A total of 500 patients were sequentially included in the study as they attended the Psychiatric outpatient department.

Patients of either sex in the age group of 12 years to 60 years, attending the Psychiatric Outpatient department, who were diagnosed to be suffering from any psychiatric illness and prescribed at least one psychotropic drug, and were taking medications since less than or equal to 1 month and those willing to participate in the study were included in the study.

Patients having the age less than 12 years and more than 60 years, taking medications for more than 1 month, those with any medical comorbidity, patients having mental and behavioural disorders due to psychoactive substance use, pregnant women and patients/ their relatives not willing to give assent for the study were excluded.

A Case Record Form (CRF) was prepared to collect all the relevant information from the patients.

The collected data was analysed according to the following criteria:

Age wise and Gender wise distribution of study population.

Drug Use Indicators (10):

1. Average Number of drugs per prescription (including other co-prescribed drugs) [Mean ± SD (SD= Standard Deviation)]
2. Average Number of Psychotropic drugs per prescription [Mean ± SD]
3. Percentage of drugs prescribed by Generic name
4. Percentage of Prescriptions with an Antibiotic prescribed
5. Percentage of prescriptions with an injection prescribed
6. Percentage of drugs prescribed from Essential Drug List or Formulary [National List of Essential Medicines (NLEM) 2015 (11) and 20th WHO Model List of Essential Medicines (March 2017) (12)]
7. Most commonly prescribed group of Psychotropic drugs (among the groups like Antipsychotics, Antidepressants, Antimanic and Antianxiety drugs)
8. Most commonly prescribed Psychotropic drug
9. Most commonly prescribed drug from each group of Psychotropic drugs
10. Percentage of prescriptions containing Psychotropic Fixed Dose Combinations (FDCs)
11. Percentage of drugs prescribed from the Hospital drug store

The values of Mean and S.D. were calculated using Microsoft Excel Software.

3. *Results*

The age group of 25 to 36 years had maximum number of patients [247 (49.4%)]. Out of the total 500 cases surveyed, the number of males [292 (58.4%)] was higher than that of Females [208 (41.6%)]. All 500 prescriptions were analysed using various Drug Use Indicators, and their results are tabulated in Table 1 below.

Table 1. Assessment of Drug Utilization by using various Drug Use Indicators

Sr No	Drug Use Indicators	Result
1	Average no of drugs per prescription (including other co-prescribed drugs) [Mean ± SD]	3.14 ± 1.18
2	Average no of Psychotropic drugs per prescription [Mean ± SD]	2.27 ± 0.90
3	Percentage of Total drugs (Psychotropic drugs+ Other co-prescribed drugs) prescribed by Generic name	1326/1572 (84.35%)
4	Percentage of Psychotropic drugs prescribed by Generic name	942/1134 (83.07%)
5	Percentage of Prescriptions with an Antibiotic prescribed	0/500 (Zero %)
6	Percentage of prescriptions with an injection prescribed	1/500 (0.2%)
7	Most commonly prescribed group of Psychotropic drugs	Antipsychotics
8	Most commonly prescribed Psychotropic drug	Olanzapine
9	Percentage of prescriptions containing Psychotropic Fixed Dose Combinations (FDCs)	1/500 (0.2%)

The 500 prescriptions contained 1572 drugs, out of which 1134 were Psychotropic drugs. The other drugs commonly co-prescribed were Calcium lactate, Ferrous sulphate-Folic acid, Multivitamins, and Vitamin B complex. Only one patient was prescribed an Injection on OPD basis and it was Injection Haloperidol (Long acting) 50 mg. Similarly, only one patient was prescribed a Psychotropic Fixed Dose Combination (FDC) and that was Trifluoperazine 5 mg + Trihexyphenidyl 2 mg.

The Percentage of drugs (Psychotropic drugs, other co-prescribed drugs, and total drugs) prescribed from Essential Drug Lists (NLEM and WHO Model List) are documented in Figure 1 below.

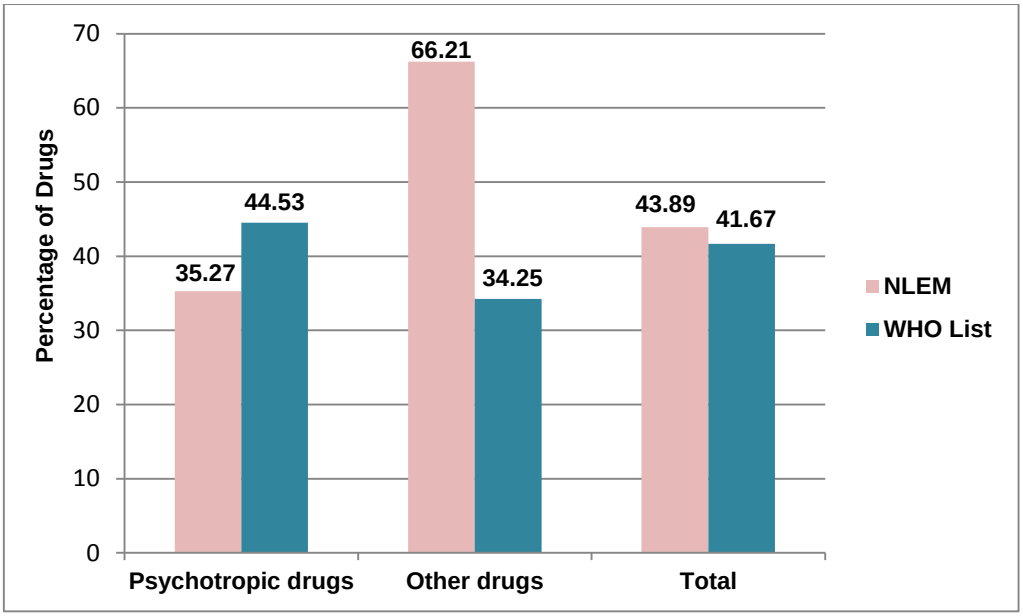

Figure 1. Percentage of drugs prescribed from Essential drug lists

Figure 1 shows that in all categories, viz, Psychotropic drugs, other drugs and total drugs, less than 50% of the drugs were prescribed from NLEM, 2015 and 20th WHO Model List of Essential Medicines (March 2017), except for the rate of prescription of Other drugs from NLEM which was 66.21%. Most commonly prescribed drug from each group of Psychotropic drugs was ascertained and tabulated in Table 2 below.

Table 2. Most commonly prescribed drug from each group of Psychotropic drugs

Group of Psychotropic drugs	Most commonly prescribed drug from the group	Number of patients	Percentage of patients
Antipsychotics	Olanzapine	163	14.27%
Antidepressants	Sertraline	80	7.05%
Antimanics	Valproate	114	10.05%
Antianxiety	Diazepam	157	13.84%

Olanzapine was not only the most commonly prescribed drug among Antipsychotics, but it was also the most commonly prescribed Psychotropic drug overall.

Percentage of Psychotropic drugs and other co-prescribed drugs prescribed from the Hospital drug store were calculated and depicted graphically in Figure 2 below.

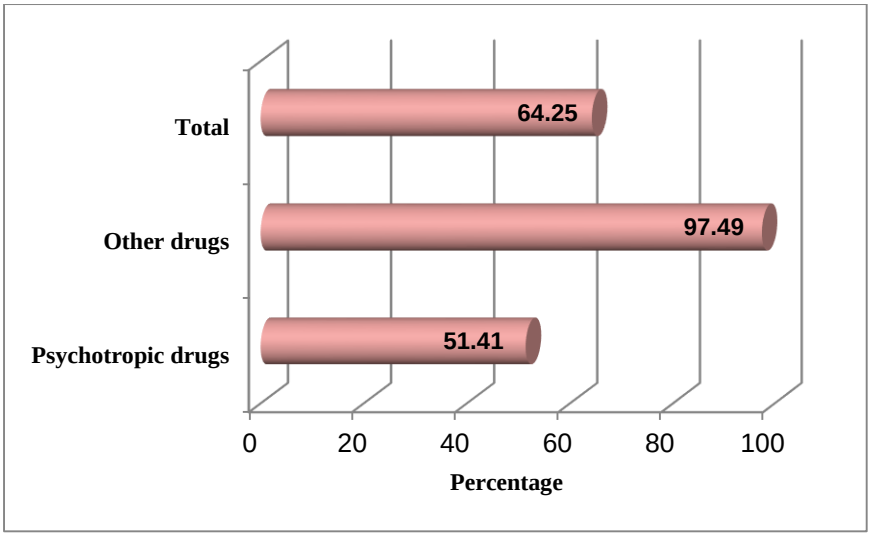

Figure 2. Percentage of Drugs prescribed from the Hospital drug store

4. Discussion

Prescription gives insight into the nature of healthcare delivery system in drug utilization research (2). The study of drug use pattern provides opportunity to monitor therapeutic trends. During the past few years, the development of novel Psychotropic drugs has drastically changed the drug therapy protocols (4). Therefore, Drug utilization studies on Psychotropic drugs are essential.

In the present study, maximum number of the patients (247 patients or 49.4% patients) belonged to the age group of 25 to 36 years. This finding coincides with the study conducted by Thakkar KB et al. 2013(4).

In the current study, males constituted higher percentage than females. This finding is similar to the study conducted by Mudhaliar MR et al. (13).

Drug Utilization Pattern was assessed using WHO Drug Use indicators and some other parameters.

In the current study, the average number of drugs per prescription was 3.14 ± 1.18, and the average number of Psychotropic drugs per prescription was 2.27 ± 0.90. Similar findings were reported in another study (4). One literature source defines Psychotropic Polypharmacy as the concurrent prescription of two or more psychiatric drugs to a patient (9). Thus, comparing the findings of the present study (2.27 ± 0.90) with this definition, Polypharmacy is found to be present for the Psychotropic drugs. The hospital where this study was undertaken is a tertiary care hospital. So, here the patients suffering from advanced stages of Psychiatric illness or complicated or chronic psychiatric illness are treated. Such patients require multiple drugs to be given simultaneously. This may be the reason of Psychotropic polypharmacy observed in this study.

More than 80% of the drugs were prescribed by Generic name in this study, which was in line with the findings reported by Mukherjee S et al., 2014 (14). No Antibiotic was prescribed in this study, and Injectable preparation was prescribed in only one prescription. This low rate of prescription of injectable medicines might be because of the fact that this study was conducted on an OPD basis. Apart from that, most of the Psychiatric illnesses are of chronic nature. Therefore, the oral preparations of the drugs are preferred, because Injections cause discomfort to the

patients, thereby reducing their compliance towards the treatment, especially when needed to be administered over prolonged period as in case of Psychiatric disorders.

The current study revealed that less than 50% of the Psychotropic drugs as well as Total drugs (Psychotropic drugs and Other drugs combined) were prescribed from NLEM, 2015 and 20th WHO Model List of Essential Medicines (March 2017). Our findings coincided with those of Mukherjee S et al., 2014 (14).

Most common group of Psychotropic drugs prescribed (Antipsychotics) and most commonly prescribed psychotropic drug (Olanzapine) in the present study were found to be similar to the results of Gurung A et al., 2018 (15).

In our study, Psychotropic FDC was prescribed in only one prescription. The reason for lower rate of prescription of Psychotropic FDCs in the current study was the non-availability of Psychotropic FDCs in the hospital pharmacy.

In the present study, 51.41% of Psychotropic drugs, 97.49% of other drugs, and 64.25% of Total drugs were prescribed from the Hospital drug store. Our results differ from the studies conducted by Chawla S et al., 2017 (16) and Mudhaliar MR et al., 2017 (13), where 83.16% and 89.15% of the drugs, respectively, were supplied from the hospital pharmacy.

In this study, some of the commonly prescribed Psychotropic drugs, like Olanzapine (prescribed to 163 patients), Trifluoperazine (prescribed to 90 patients), Lorazepam (prescribed to 77 patients), and some other commonly prescribed Psychotropic drugs like Propranolol, Clonazepam, etc. were not available in the Hospital drug store at the time of collection of data for this study. Therefore, these drugs had to be prescribed from outside. These commonly prescribed drugs form a significant proportion of the Psychotropic drugs prescribed in this study. This led to the lower percentage of Psychotropic drugs being prescribed from the Hospital drug store.

Among the other co-prescribed drugs in our study, most of them were available in the Hospital drug store at the time of data collection. Hence, the percentage of prescription of those drugs from Hospital drug store was found to be very high.

5. Conclusion

It is essential to identify the current practice of drug utilization in Psychiatric patients as it would help the policy makers to construct appropriate guidelines for efficient management of Psychiatric disorders.

The results obtained from the current study demonstrated that:

1. The majority of the patients were in their 3rd or 4th decade of life. Some other similar studies done in India also reported the same finding. Thus, it is evident that Psychiatric illnesses have started affecting the Indian population at an early age.
2. The prescriptions observed were complete in terms of mentioning the dosage form, dose, frequency of administration, the duration of treatment and instructions given to the patients.
3. Further studies are warranted to analyse the causes of Psychotropic polypharmacy observed in this study, and to find ways to minimize it as much as possible.
4. The prescription of majority of the drugs by Generic name and very low prescription rate of injections on OPD basis, highlighted that the drugs were

prescribed rationally as per WHO Drug use indicators.

5. There is a need to increase the rate of prescription from both the Essential Drug Lists (NLEM and WHO List).
6. The percentage of Psychotropic drugs prescribed from the Hospital drug store was less. It is, therefore, required to increase the availability of Psychotropic drugs in the hospital drug store of the study institution.

***Limitations*:**

As this was a cross-sectional study, the follow up of the patients under study was not done. In many patients, depending on their response to the treatment, the medications might be, in future, increased or tapered off. Hence, in later stages, the number of drugs may change, which was not possible to be documented in this study. This study was conducted in a tertiary care teaching hospital, due to which the results may differ from the studies conducted in non-teaching and secondary care hospitals as many a times they do not have a separate Psychiatry OPD.

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Conflicts of Interest

None

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