# DRUG UTILIZATION PATTERN OF PSYCHOTROPIC DRUGS IN PSYCHIATRY OUTPATIENT DEPARTMENT

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## ABSTRACT

Psychotropic drugs have had a remarkable impact in psychiatric practice. The development of newer drugs like SSRIs and atypical antipsychotics have drastically changed the drug therapy protocols. However, their utilization in actual clinical practice, effectiveness and safety in real life situation need continuous study. This study aims to assess the drug utilization pattern of psychotropic drugs in psychiatry outpatient department using WHO prescribing indicators.[1]

A cross-sectional study was conducted for over a period of six months in psychiatry OPD of a tertiary care hospital. A total of 200 patients satisfying the inclusion criteria were analyzed to study the drug utilization pattern of psychotropic drugs in psychiatry OPD. Data analysis was conducted by using descriptive statistics, chi-square test, and z-test. Analysis of 200 patients showed equal gender distribution, with the majority aged 31-40. Anxiety (34%), depression (27%), and psychosis (17%) accounted for 78% of disorders. Average drugs per prescription: 2.435. Only 0.5% of drugs were generic. 47.7% were from essential drug lists. No antibiotics or injections were prescribed. Common drugs: escitalopram (68.83%), olanzapine (44.1%), desvenlafaxine (34.8%), risperidone (32.8%), trihexyphenidyl (28.5%), and quetiapine (25.7%). Least common: sertraline (0.9%), vortioxetine (1.51%), venlafaxine (1.51%), dosulepin (1.51%), and aripiprazole(1.42%).The study offers Insight into psychotropic drug utilization patterns, aiming to evaluate their prescription trends. Analysis of 200 prescriptions using WHO

indicators revealed escitalopram, olanzapine, desvenlafaxine, risperidone, trihexyphenidyl, and quetiapine as frequently prescribed for anxiety, depression, and psychosis.

**KEYWORDS:** Drug utilization, psychotropic drugs, WHO prescribing indicators.

## INTRODUCTION

A psychiatric disorder or mental disorder is described by a clinically significant disturbance in an individual's cognition, emotional regulation, behaviour. It is usually coexistent with distress or deterioration in important areas of function.[2] For the treatment of psychiatric disorders, a wide array of psychotropic drugs are available. During the past two decades, the development of newer drugs like selective serotonin reuptake inhibitors (SSRIs) and atypical antipsychotics have drastically changed the drug therapy protocols.[3] The pattern of their usage in psychiatric practice has undergone a dramatic change in the recent years. This can be attributed to the development of newer agents and a broader range of indications.

WHO developed core and complementary drug use indicators for evaluation of drug use in healthcare settings. Among which, the core drug use indicators have been considered as the first line indicators validated by WHO for measurement of drug use. The core drug use indicators are more informative, more feasible, less likely to fluctuate over time and place as well as easier to measure drug use than the complementary indicators. Therefore, the core indicators have been selected for better quantitative evaluation of RDU.[4]

**They are as follows**

- Average number of drugs per prescription
- Percentage of drugs prescribed by generic name
- Percentage of encounters with an antibiotic prescribed
- Percentage of prescriptions with an injection prescribed
- Percentage of precriptions with drugs prescribed from essential drug list[5]

## METHODS AND MATERIALS

1. Study design: Prospective Cross-sectional study
2. Study setting: SH Medical Centre, Kottayam
3. Study duration: 6 months

**Study population:** The study population includes all the patients satisfying the inclusion criteria. A minimum sample size of 200 patients were required to meet the objectives for our

study to get a statistically significant data. Sample size was calculated by the Cochran formula.

**Inclusion criteria**

1. Patients of all ages and both the genders who were diagnosed with psychiatric disorder according to ICD 11 criteria.
2. Patients prescribed with at least one psychotropic drug.

**Exclusion criteria**

1. Patients who could not comply with the study such as severe psychiatric illness.
2. Patients who are not willing to participate in the study.

**RESULT**

**Table 1: Classification according to patient's gender N=200.**

| Gender | Number of patients (n) |
|--------|------------------------|
| Male   | 100                    |
| Female | 100                    |

**Table 2: Classification according to age range N=200.**

| Age group (years) | Number ofpatients (n) | Percentage |
|-------------------|-----------------------|------------|
| 10-20 | 13 | 6.5% |
| 21-30 | 31 | 15.5% |
| 31-40 | 42 | 21% |
| 41-50 | 35 | 17.5% |
| 51-60 | 21 | 10.5% |
| 61-70 | 29 | 14.5% |
| 71-80 | 23 | 11.5% |
| 81-90 | 5 | 2.5% |

**Table 3: Classification according to psychiatric disorders observed in the study N=200.**

| Disease | Number ofpatients (n) | Percentage |
|---------|-----------------------|------------|
| Anxiety | 68 | 34% |
| Depression | 54 | 27% |
| Psychosis | 34 | 17% |
| Schizophrenia | 6 | 3% |
| Bipolar Disorder | 12 | 6% |
| Dementia | 2 | 1% |
| OCD | 5 | 2.5% |
| Personality Disorder | 3 | 1.5% |
| Adjustment Disorder | 4 | 2.5% |
| ADS | 5 | 2.5% |
| NDS | 3 | 1.5% |
| Difficult Temperament | 1 | 0.5% |

| | | | |
|---|---|---|---|
| Mental Retardation | | 1 | 0.5% |
| ASD | | 1 | 0.5% |
| Alcohol Withdrawal Syndrome | | 1 | 0.5% |

**Table 4: Drug utilisation pattern of psychotropic drugs.**

| Disease | Drugs prescribed | Frequency | Number ofdrugs prescribed |
|---|---|---|---|
| Anxiety | Escitalopram | 53 | 94 |
| | Olanzapine | 34 | |
| | Sertraline | 7 | |
| Depression | Desvenlafaxine | 23 | 66 |
| | Sertraline | 21 | |
| | Escitalopram | 14 | |
| | Fluoxetine | 3 | |
| | Mirtazapine | 2 | |
| | Vortrioxetine | 1 | |
| | Venlafaxine | 1 | |
| | Dosulepin | 1 | |
| Psychosis | Risperidone | 23 | 70 |
| | Trihexyphenidyl | 20 | |
| | Quetiapine | 18 | |
| | Sodium valproate | 8 | |
| | Aripiprazole | 1 | |
| Schizophrenia | Risperidone | 5 | 12 |
| | Trihexyphenidyl | 3 | |
| | Quetiapine | 3 | |
| | Aripiprazole | 1 | |
| Bipolar disorder | Sodium valproate | 6 | 18 |
| | Risperidone | 3 | |
| | Fluoxetine | 3 | |
| | Lithium | 3 | |
| | Trihexyphenidyl | 2 | |
| | Aripiprazole | 1 | |
| Dementia | Donepezil | 7 | 14 |
| | Memantine | 7 | |
| OCD | Fluoxetine | 1 | 2 |
| | Mirtazapine | 1 | |
| Personality disorder | Escitalopram | 2 | 3 |
| | Olanzapine | 1 | |
| Adjustment disorder | Escitalopram | 3 | 7 |
| | Olanzapine | 4 | |
| ADS | Disulfiram | 2 | 3 |
| | Lorazepam | 1 | |
| NDS | Nicotine | 2 | 5 |
| | Escitalopram | 2 | |
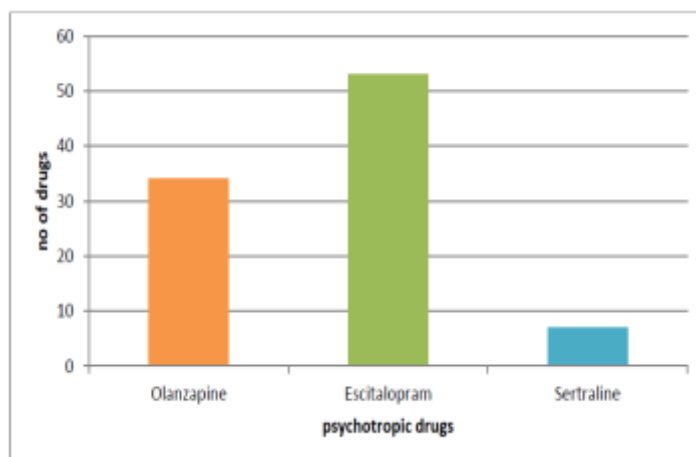
**Fig. 1: Showing the prescription pattern of psychotropic drugs among the study population for anxiety.**
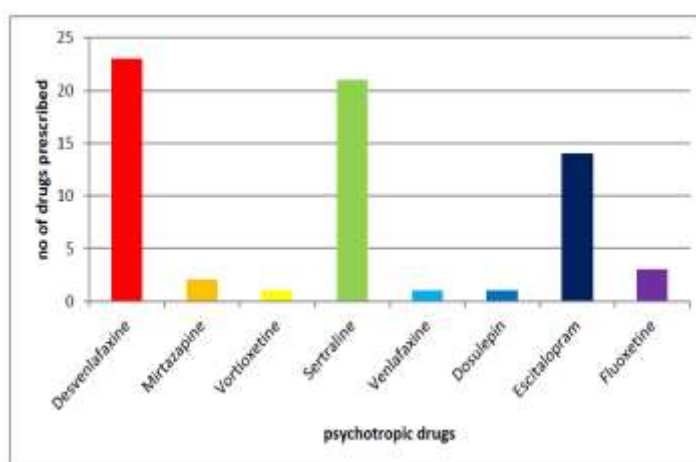


**Fig. 2: Showing the prescription pattern of psychotropic drugs among the study population for depression.**
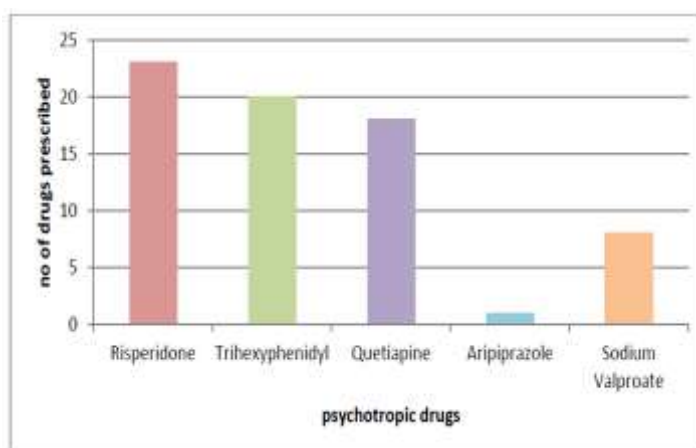


**Fig. 3: Showing the prescription pattern of psychotropic drugs among the study population for psychosis.**

**Table 5: Statistical testing on prescribing indicators.**

| Who drugsprscribing indicators | Observedvalues | Observed percentage | Who standardvalues |
|---|---|---|---|
| Average numberof drugs per prescription | 2.435(487/200) | - | <2 |
| Percentage of encounters withan antibiotic prescribed | 0 | 0 | <30% |
| Percentage of drugs prescribedby generic name | 1 | 0.5 | 100% |
| Percentage of prescriptions with an injectionprescribed | 0 | 0 | <20% |
| Percentage of prescriptions with medicines prescribed from essential drug list | 218 | 47.7% | 100% |

**Testing the prescribing indicator "Average number of drugs per prescription"** Simple two tiled z-Test was used to test whether of average number of drugs per prescription in the study population was same as that of WHO recommendations.

z-value = 5.827404617

Here p-value is very small and less than 0.00001.

That is p-value <0.05. So we reject the null hypothesis. It means that there is significant difference in this prescription pattern suggested by WHO.

It was evident that this prescription pattern in the study population was higher than the prescription pattern recommended by WHO.

**Testing the prescribing indicator "Percentage of prescriptions with an antibiotic prescribed"**

Testing whether of Percentage of prescriptions with an antibiotic prescribed in the study population was same as that of WHO recommendations.

In our study population there were no prescriptions with an antibiotic prescribed. The WHO standard for prescriptions with an antibiotic prescribed was less than 30%.

Since there were no prescriptions with an antibiotic prescribed, there was no significancefor a

statistical test. It was evident that this prescription pattern in the study population was in compliance with the prescription pattern recommended by WHO.

### Testing the prescribing indicator "Percentage of drugs prescribed by generic name"

Two tiled z-Test was used to test whether of Percentage of drugs prescribed by generic name in the study population was same as that of WHO recommendations.

z-value = 14.07142495

Here p-value is very small and less than 0.00001.

That is p-value <0.05. So we reject the null hypothesis. It means that there was significant difference in this prescription pattern suggested by WHO.

The WHO proposes that optimally, all medicines (100%) should be prescribed by generic names. But here it was evident that this prescription pattern in the study population was very much lower than the prescription pattern recommended by WHO.

### Testing the prescribing indicator Percentage of prescriptions with injection(s) prescribed

Testing whether of Percentage of prescriptions with injection(s) prescribed in the study population was same as that of WHO recommendations. This indicator describes the frequency with which injectable forms of medicines were prescribed.

In our study population there were no prescriptions with injections. The WHO standard for prescriptions with injection was less than 20%. Since there were no prescriptions with injection(s) prescribed, there was no significance for a statistical test. It was evident that this prescription pattern in the study population was in compliance with the prescription pattern recommended by WHO.

### Testing the prescribing indicator Percentage of drugs prescribed from the national essential drug list

Two tiled z-Test was used to test whether of Percentage of drugs prescribed from thenational essential drug list in the study population was same as that of WHO recommendations.

z-value = 11.5416

Here p-value is very small and less than 0.00001.

That is p-value <0.05. So we reject the null hypothesis. It means that the prescriptionpattern was not the same as the prescription pattern suggested by WHO.

It was evident that this prescription pattern in the study population was lower than the prescription pattern recommended by WHO.

From the above analysis of prescription patterns, we can conclude that the Percentage ofdrugs prescribed by generic name was much lower than the WHO standards. There was only one prescription under the generic name. But the average number of drugs per prescription was much higher than the standards.

The percentage of drugs prescribed from national essential drug list was only 0.5% of the WHO recommended value.

Whereas the percentage of prescriptions with an antibiotic prescribed and percentage of prescriptions with injection(s) prescribed were only in compliance with the standards asthere were no prescriptions in the study population.

**CONCLUSION**

This study provides an insight into the drug utilization pattern of psychotropic drugs. The purpose of the study was to assess the drug utilization and prescription pattern of psychotropic drug usage. In our study, 200 prescriptions were analysed according to WHO indicators. Escitalopram, olanzapine, desvenlafaxine, risperidone, trihexyphenidyl and quetiapine were the most commonly prescribed drugs for anxiety, depression, and psychosis. The clinical pharmacist can provide their services by doing clinical interventions and inspecting patient care areas and nursing stations regarding psychotropic drugs. To maintaina professional competence clinical pharmacists should play an active role by obtaining patients medication history and also maintaining accurate reports of psychotropic drugs as a part of drug utilisation evaluation to reduce morbidity and mortality.Therefore theimplementation of a multidisciplinary healthcare team including a clinical pharmacist (Pharm D) will be beneficial to achieve the rational use of medicines, increase patient safety,and to contribute to a better quality of life.

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