

Observational Study To Evaluate Patterns Of Prescription In A Psychiatry Outpatient Department In A Tertiary Care Teaching Hospital

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Abstract: Objective: To study the prescription patterns in a psychiatry outpatient department in a tertiary care teaching hospital. Methodology: An observational study was conducted from August 2007 to January 2008 in a psychiatry outpatient department in a tertiary care teaching hospital. A total of 300 patients suffering from 3 major classes of psychiatric illnesses (Schizophrenia & other psychotic disorders, Mood disorders, Anxiety disorders as diagnosed by Psychiatrists). The data from the prescription card of the patients was noted in a structured pro forma. Results: Prescription analysis showed that average number of drugs per encounter (Mean \pm SD) was 2.53 ± 0.97 . Not a single drug was prescribed by generic name. Injection was prescribed in 5% of prescriptions. 67.41% of drugs were prescribed from hospital formulary while 60.03% of drugs were actually dispensed from the hospital pharmacy. In Schizophrenia and other psychotic disorders, most common antipsychotic drug prescribed was Trifluoperazine followed by Chlorpromazine. In mood and anxiety disorders, most common drug prescribed was Imipramine and Chlordiazepoxide respectively. Conclusion: The present study could serve as a platform upon which further studies in prescription analysis of psychotropic drugs can be undertaken to investigate the scope for improvement in prescribing practices in psychiatry. [Goyal SG NJIRM 2016; 7(1):31-36]

Key Words: Prescription pattern, Psychiatry, Tertiary healthcare

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Introduction: Mental disorders form a significant public health problem and may present either as a primary disorder or as a comorbid condition. Mental illness affects one in four people at some stages of their lives. Today, an astounding 450 million people in the world are experiencing mental illness of which majority belong to the developing countries.¹ Global burden of disease statistics indicate that 4 out of the 10 most important causes of diseases worldwide are psychiatric in origin.²

The symptoms of psychiatric disorders often begin early in life, impairing the ability of the patients to learn, thus compromising their function in day to day activities. Psychiatric disorders contribute substantially to the burden of illnesses in most countries due to its high prevalence, early onset and persistence. Mood disorders, schizophrenia, and to some extent other psychiatric disorders not only adds to disability but also leads to premature death in form of committing suicide, which is one of the important reasons of death worldwide.² Despite this substantial burden of disease, mental health care remains a neglected issue, especially in developing countries.

A wide spectrum of psychotropic drugs is used either alone or in combination for the treatment of various psychiatric disorders. Since the middle of the twentieth century, several classes of drugs (antipsychotic drugs, antidepressant drugs, lithium, benzodiazepines and

anticonvulsants) have been developed and found to be efficacious in clinical trials. Second generation antipsychotics (SGAs) were introduced in the 1990s.³ The emergence of SGAs has led to a shift in the pharmacological treatment of schizophrenia, with use of the SGAs in general favoured over the use of first generation antipsychotics (FGAs).⁴ Similarly, the availability of new Selective Serotonin Reuptake inhibitors (SSRIs), beginning with Fluoxetine in 1988, Sertraline in 1991, and Paroxetine in 1992, has had an enormous impact on the prescription of psychopharmacological agents for depression.^{5,6} Therefore, in the past two decades, the availability of new and effective psychotropic agents has opened up newer treatment options for the treatment of psychiatric disorders.⁷

Drug utilization significantly varies not only among different countries but also among health institutions within a country.⁸ There is an overall increasing trend in utilization of psychotropic drugs in the treatment of outpatient medical practice. Utilization studies of psychotropic drug use in both hospital and community populations have been published from a number of countries.⁹⁻¹² Due to inadequate published reports of drug utilization trends in psychiatry in India, this study was conducted in our tertiary care hospital.

The primary objective of the study was to investigate the current prescription patterns using World Health Organization (WHO) drug utilization study indicators¹³ in psychiatry outpatient department (OPD). The secondary objective was to evaluate the utilization of individual drugs for the treatment of psychotic disorders, mood disorders and anxiety disorders during the study period.

Material and Methods: The drug prescribing trends and its utilization were investigated in the psychiatric OPD of our tertiary care hospital. The present study was prospective, observational and spanned over a period of 6 months from August 2007 to January 2008. Institutional Ethics Committee (IEC) approval was taken before initiating the study.

300 patients suffering from three classes of psychiatric illness (Schizophrenia & other psychotic disorders, Mood disorders, Anxiety disorders) of either sex and irrespective of age were included. Diagnosis was given by the psychiatrists based on their judgment – DSM IV TR criteria.¹⁴ Written informed consent was obtained from the patients or his/her relative after complete explanation of the study.

The data from the prescription card of the patients was noted in a structured proforma. The following WHO core drug prescribing indicators¹³ were evaluated: (a) average number of drugs per encounter (b) percentage of drugs prescribed by generic names (c) percentage of encounters with an injection (d) percentage of drugs prescribed from our hospital formulary (e) percentage of drugs actually dispensed. After each OPD, the hospital pharmacy was visited in order to calculate the last parameter.

The secondary objective was fulfilled by calculating the percentage utilization of individual drugs for the treatment of Schizophrenia & other psychotic disorders, mood disorders and anxiety disorders. The data of the study was statistically analyzed using SPSS version 15.0 statistical software.

Results:

In the cohort of 300 patients, the majority were female (54%) and were in the age group of 21-40 years (52.3%) followed by 41-60 years age group (35%). The major diagnostic group was schizophrenia and other psychotic disorders (52.3%) followed by mood disorders (44.7%) and then anxiety disorders (11%) as depicted in Table 1.

Table 1: Demographic and diagnostic profile of the patients (n=300)

Patients characteristics		Number of patients (%)
Gender	Male	138 (46 %)
	female	162 (54 %)
Age (in years)	< 20	15 (5 %)
	21 - 40	157 (52.3 %)
	41 - 60	105 (35 %)
	> 60	23 (7.7 %)
Diagnosis*	Schizophrenia & others psychotic disorders	157 (52.3 %)
	Mood Disorders	134 (44.7 %)
	Anxiety Disorders	33 (11 %)

*8 patients had a dual diagnosis of psychotic disorders and mood disorders while 16 patients had a dual diagnosis of mood disorders and anxiety disorders.

Assessment of prescription patterns

In 300 prescriptions seen in psychiatric OPD, 758 drugs were prescribed. Out of 758 drugs, 679 were psychotropic drug. 511 drugs were prescribed from our hospital formulary while 455 drugs were actually dispensed from the hospital pharmacy. All the drugs were prescribed by their brand name. 15 patients received depot injections. 14 patients received depot injection Fluphenazine and one patient received depot injection Zuclopenthixol. The various drug use indicators are summarized in Table 2.

Table 2: Assessment of prescription patterns: drug use indicators (n=300)

Parameter assessed	Results
Average number of drugs per encounter (Mean ± SD)	2.53 ± 0.97
Percentage of drugs prescribed by generic names	0 %
Percentage of encounters with an injection	5 %
Percentage of drugs prescribed from hospital formulary	67.41%
Percentage of drugs actually dispensed	60.03%

Figure 1 shows the percentage utilization of drugs for the treatment of Schizophrenia & other psychotic disorders. The most commonly prescribed antipsychotic drug was Trifluoperazine followed by Chlorpromazine. Among atypical antipsychotics, most commonly prescribed drug was Risperidone followed by Olanzapine. Trihexyphenidyl 2 mg was prescribed in 130

prescriptions (82.80 %). Figure 2 shows the percentage utilization of drugs for the treatment of mood disorders. Out of 134 patients, 119 patients had only depression while 15 patients had bipolar disorder (BPD). The most often prescribed antidepressant drug was Imipramine. Among SSRIs, most commonly prescribed drug was Escitalopram. For bipolar disorders, Lithium carbonate was most commonly prescribed followed by Divalproex

sodium. Figure 3 shows the percentage utilization of drugs for the treatment of anxiety disorders. The most often prescribed benzodiazepine drug was Chlordiazepoxide followed by Clonazepam. Imipramine was also prescribed in a considerable number of anxiety patients (39.39%).

Figure 1: % utilization of drugs for the treatment of Schizophrenia & other psychotic disorders. (n = 157)

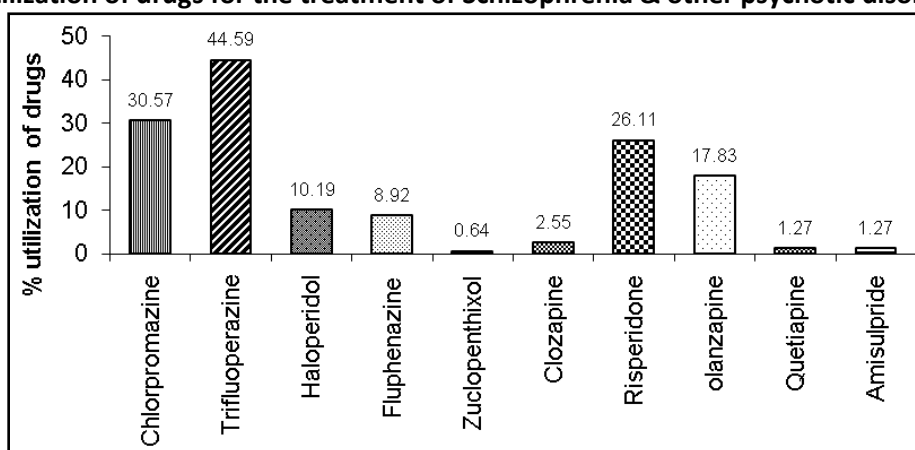


Figure 2: % utilization of drugs for the treatment of mood disorders. (n = 134)

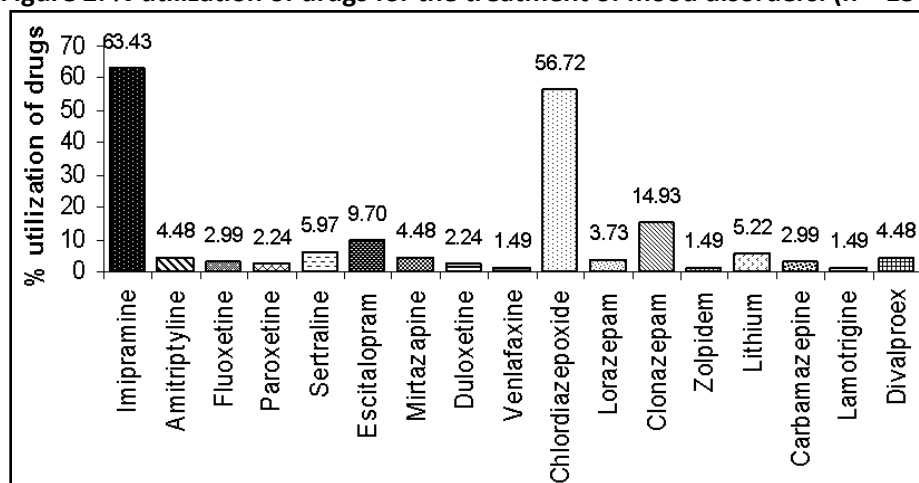
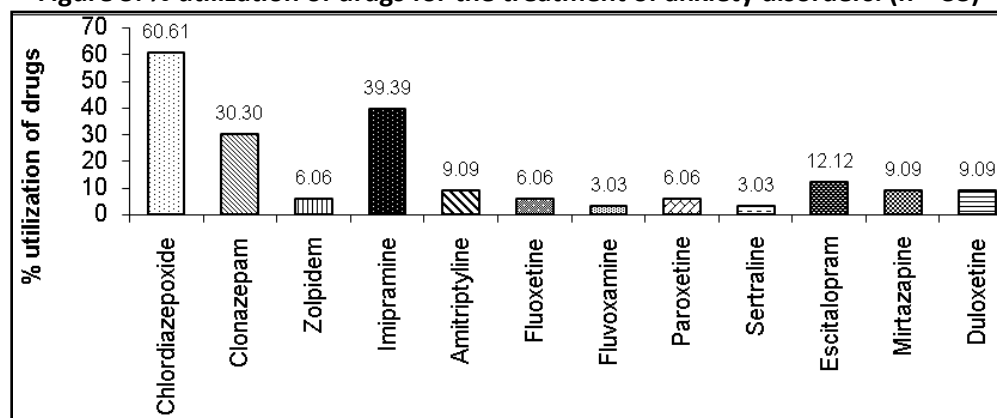


Figure 3: % utilization of drugs for the treatment of anxiety disorders. (n = 33)



Discussion: A prescription may be taken as a reflection of the physicians' attitude to disease and his/her decision to its treatment. It also provides valuable insight into the nature of our health care delivery system. The ambiguities in our existing prescribing trends at health care facilities need to be explored to overcome the insufficiencies in our current prescribing patterns. Monitoring, evaluation, and appropriate modifications in the prescribing practices of our physicians is essential to achieve rational and cost effective medical care. Many countries are witnessing a steady increase in irrational use of drugs by both the prescribers and the consumers leading to grave economic and social consequences. Developing countries such as India needs a national drug policy to rationalize its drug use. To achieve this change, it is very important to determine drug usage patterns and monitor drug use over a period of time.¹⁵

Among the different psychiatric disorders that were studied, the major diagnostic group were that of psychotic disorders (52.3%) followed by mood disorders (44.7%) and then anxiety disorders (11%). The majority of patients in our study, were in the age group of 21-40 years (52.3%) followed by 41-60 years age group (35%). There were only 7.7% patients in the age group of 60 years & above. As compared to many Western countries, the geriatric age group (60 years and above) finds lesser representation in the psychiatric facilities in India. Two reasons can be postulated. Firstly, the proportion of older age group is comparatively less in our population. Secondly, Indian families exhibit greater respect to them and accept greater responsibilities for its aged members. Hence, it is likely that many such older people requiring psychiatric care are managed and attended well at home rather than being brought to a clinic or hospital.

Average number of drugs per prescription is an important index of prescription analysis. It is advisable to keep the mean number of drugs per prescription as low as possible since higher number of drugs always lead to increased risk of drug interaction and increased hospital costs.¹⁶ This is especially important in psychiatry, as studies have shown that polypharmacy was common and psychotherapeutic drugs have been often over-prescribed and misused.¹⁷ The average number of drugs per prescription in our study was 2.53. Current therapeutic guidelines recommend first implementing monotherapy for nearly all psychiatric disorders. When polypharmacy becomes necessary, it

should, whenever possible, be implemented according to evidence-based data or at least rational considerations with regard to pharmacokinetic and pharmacodynamic interactions.¹⁷

All the drugs were observed to be prescribed by brand names in our study. Drugs from the hospital formulary were also prescribed by the brand names known to the hospital pharmacists. 5 % of the prescriptions included depot injections and were given to patients who were refractory to oral medications. Out of 511 drugs, which were prescribed from our hospital formulary, 455 drugs were actually dispensed. This finding confirms that the drugs were not supplied in adequate quantities and therefore were out of stock from the hospital pharmacy on a number of occasions.

In our study, Trifluoperazine was the most frequently prescribed antipsychotic for the patients of psychotic disorders, accounting for 44.59% of the prescription followed by Chlorpromazine (30.57%). Among atypical antipsychotics, most commonly prescribed drug was Risperidone (26.11%) followed by Olanzapine (17.83%). In most of the studies conducted in developed countries, atypical antipsychotics have replaced conventional first line pharmacological treatment for psychotic disorders.⁹⁻¹¹ However, in a study conducted in East Asian countries, conventional antipsychotics (71.9%) were prescribed more often as compared to atypical drugs (28.1%) and Haloperidol (25.0%) was the most frequently prescribed conventional drug, followed by Chlorpromazine (9.7%).¹⁸

Older generation conventional antipsychotics are associated with significant side-effects, ranging from extra-pyramidal symptoms (EPS), such as acute dystonic reactions and tardive dyskinesia (TD), to the potentially life-threatening neuroleptic malignant syndrome and torsade de pointes tachyarrhythmia.¹⁹ Moreover, the discomfort and distress produced by these drugs often compel the patients towards non-compliance to treatment, which often leads to psychotic relapse.¹⁸ Reported rates of non-compliance to antipsychotics range from 20%–89%, with an average rate of approximately 50%.¹⁹

There is increasing evidence that patients with prescriptions for atypical antipsychotics will have a higher rate of adherence to their medication regimen than those receiving conventional agents.¹⁹ In outpatients with stable psychotic disorders in a real-

world setting, switching to an atypical antipsychotic can result in sustained, significant improvement in clinical response and quality of life, as well as reduced need for hospitalization and community support.²⁰ The National Institute For Health and Care Excellence (NICE) guidance on antipsychotic treatment in psychotic disorders has recommended atypical antipsychotic drugs in many common clinical situations, including those for new patients, relapsing patients and symptomatically well controlled patients.²¹

The cost of pharmaceuticals is one of the major factors that affect prescription of atypical antipsychotic drugs in developing countries such as India. The cost for atypical antipsychotic drugs is considerably higher than that of conventional ones, except for Clozapine in China, where cheap generics of Clozapine are available. Thus, conventional antipsychotics and Clozapine constitute the current mainstream medications utilized in treatment of schizophrenia in China.²² In our study, Trihexyphenidyl 2 mg was prescribed in 82.80 % of total prescription for psychotic disorders. Anticholinergic drugs are still widely prescribed, despite the suggestions, that only 10 to 33% of patients require these drugs when antipsychotic maintenance medication has been established. The anticholinergic drugs were prescribed for prophylactic reasons, despite the fact that they are ineffective in preventing extrapyramidal side effects.²³

In our study, Imipramine was the most frequently prescribed antidepressant in mood disorders, accounting for 63.43% of the prescription followed by Chlordiazepoxide (56.72%). Among SSRIs, most commonly prescribed drug was Escitalopram (9.70%) followed by Sertraline (5.97%). In most of the studies conducted in developed countries, tricyclics like Imipramine have been replaced by the newer but less toxic SSRIs and other atypical modern agents.¹² Efficacy, side-effects and factors influencing compliance among different antidepressant drugs determine the choice of drug. There have been reviews recommending SSRIs over older antidepressants, despite the cost. Lesser side-effects and good compliance are the reasons cited in the western literature.²⁴

Monoamine Oxidase Inhibitors (MAOIs) were not prescribed in our study. In the literature, it is found that the use of MAOIs has declined over the last five decades. The frequent reasons for not prescribing MAOIs were side effects mainly hypertensive crisis,

interactions with other medications and dietary restrictions to be followed by the patients.²⁵

In our study, Chlordiazepoxide was the most frequently prescribed benzodiazepine for anxiety disorders, accounting for 60.61% of the prescription followed by Clonazepam (30.30%). Among SSRIs, most common drug prescribed was Escitalopram (12.12 %). About 50 % of the anxiety patients also had depression as comorbidity. Among antidepressants, most commonly prescribed drug was Imipramine (39.39 %). In a study conducted in Spain, Lorazepam was the most frequently administered anxiolytic agent (42.8%) followed by Alprazolam (25%).¹²

The present study attempts mainly to assess the general pattern of psychotropic drugs used in our hospital rather than attempting to judge the appropriateness of individual prescriptions. One of the limitations of our study is that it takes into account only three major psychiatric disorders. The other psychiatric disorders though represent a smaller proportion of the psychiatric out-patient in our hospital, need separate evaluation.

Conclusion: The present study describes the patterns of prescription in a psychiatry outpatient department in a tertiary care teaching hospital. It could serve as a platform upon which further studies in prescription analysis of psychotropic drugs can be undertaken to investigate the scope for improvement in prescribing practices.

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