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A STUDY ON MEDICATION THERAPY IN PSYCHIATRIC DISORDERS IN A TERTIARY CARE HOSPITAL

Shilpa S. Pavizhen*[1], B. Shanker Reddy[2] and Dr. Gopaldas C. M.[3]

[1]Department of Pharmacy Practice, SJM College of Pharmacy, Chitradurga.

[2]Assistant Professor, Department of Pharmacy Practice, SJM College of Pharmacy, Chitradurga.

[3]Associate Professor, Department of Psychiatry, Basaveshwara Medical College & Hospital, Chitradurga.

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***Corresponding Author**
Shilpa S. Pavizhen
Department of Pharmacy Practice, SJM College of Pharmacy, Chitradurga.

ABSTRACT

Background: The expanding field of psycho-pharmacology is constantly seeking new and improved drugs to treat psychiatric disorders. The study was thus designed to analyze the prescription pattern of psychotropic drugs and their adherence in patients in a tertiary care hospital. **Materials and Methods:** A six month based prospective observational study included hospital out-patients treated in psychiatric department of Basaveshwara Medical College & Hospital, Chitradurga. A total of 77 patients were enrolled in the study. 31.23% patients belong to the age group of 30-39 years was found to be represented with maximum psychiatric disorders. Male patients are more in number. Schizophrenia was found to be the most common psychiatric disorder encountered (29.62%) followed by Depression (14.81%) and Bipolar affective disorder (14.81%). Out of 220 drugs prescribed, 72drugs are antipsychotics, 51 antidepressants and 34 anxiolytics. The medication adherence assessment showed poor adherence in BPAD and schizophrenic patients. **Conclusion:** This study provides baseline strength of carrying out further studies on prescribing pattern and medication adherence in a tertiary care unit, which would help for improving the utilization of psychotropic drugs in mental health facilities.

KEYWORDS: Psychiatric disorder, Psychotropic drugs, Medication Adherence, Prescribing pattern.

INTRODUCTION

A mental disorder is also called as mental illness, psychological disorder or psychiatric disorder, is mental or behavioral pattern that causes either suffering or a poor ability to function in ordinary life.[1] WHO estimated that globally over 450 million people suffer from mental disorders. This is likely to increase to 15 percent by 2020.[2]

Depression, alcohol use disorders, schizophrenia and bipolar disorders constitute the top 10 conditions contributing to the global burden of disease among the age group of 15–44 years. Mental and behavioral disorders are present, in about 10% of the adult population, at any given point of time. Various Indian studies show that nearly 1 per cent of the Indian population suffers from severe mental disorders and 5-10 per cent from moderate disorders, requiring psychiatric help.[3]

Risk factors for the development of mental disorders are gender, age, ethnicity, physical health, cognitive and psychological function, pre- and perinatal exposures to illness, physical stress, alcohol, drugs, nutrition, infections and other environmental agents, and lifetime history of environmental exposures to toxins, stress, infections, social environment and stressful life events; family and parent characteristics including parental education, age, social class, employment, psychiatric and medical history and family function.[4]

Psychotropic drugs are playing an increasingly central role in the treatment of mental disorders.[5] These drugs are capable of affecting the mind, emotions and behavior. Anti-psychotics, antidepressants, mood stabilizers and antianxiety agents are the major class of drugs used to treat mental disorders.

The rapidly expanding field of psychopharmacology is challenging the traditional concepts of psychiatric treatment and research, and is constantly seeking new and improved drugs to treat psychiatric disorders. In this way, psychiatrists are continuously exposed to newly introduced drugs that are claimed to be safe and more efficacious. Although psychotropic medications have had a remarkable impact on psychiatric practice that legitimately can be called revolutionary, their utilization and consequences on real life effectiveness and safety in actual clinical practice need continuous study.

The study of prescribing patterns seeks to monitor therapeutic trends, evaluate and if necessary, suggest modifications in prescribing patterns so as to make medical care rational

and cost effective.[7] Evaluation of prescribing pattern helps for improving the utilization of drugs like Antipsychotics, Neuroleptics and Mood stabilizer in mental health facilities.[8]

Medication adherence is a dynamic decision process and it reflects a patient's effort to optimally manage health, symptoms, and physical function. Adherence to psychiatric drugs is essential for the effective management of patients with major psychiatric disorder.[9]

Advancement in the treatment of psychiatric disorders are limited by discontinuation of medication and steal power from even the most benificial medications.[10] Poor adherence with lithium and anticonvulsant medications has been found to be a common occurrence among individuals with bipolar disorder (estimates range between 20 and 55%) and is often associated with negative clinical outcome.[11] In patients with schizophrenia, non-adherence to antipsychotic maintenance treatment leads to psychotic relapse, re-hospitalization, and more frequent clinic and emergency room visits.[12] Non adherence results in significant social and economic burden.[13]

Hence Keeping in view of the above facts the study will be taken to assess the prescription pattern of psychotropic drugs and to find out the most frequently occurring psychiatric disorder and also to assess the medication adherence to psychotropic medications among patients with bipolar disorder and schizophrenia.

MATERIALS AND METHODS

Study design

This is a hospital based prospective observational study.

Study period

The study was conducted over a period of six months from November 2016 to March 2017 at Psychiatric out- patient department of Basaveshwara Medical College & Hospital, Chitradurga.

Study subjects

All patients who were presented to the Psychiatric out-Patient department of the hospital during the study were eligible for enrolment. Patient who met the following criteria were enrolled.

Inclusion Criteria

1. Patients who were seeking treatment at psychiatric department and willing to participate.
2. Patients from all age groups and both sexes were included.

Exclusion Criteria

1. Being judged clinically to be at a suicidal risk (too serious not to included in the study).
2. Suffering from any serious disease such as unstable coronary heart disease, liver failure, heart failure etc.

Study methodology

The study was conducted after the ethical clearance from the Institutional Ethical Committee of Basaweshwara Medical College Hospital & Research Centre, Chitradurga. Vide number: SJMCP/IEC/25/2016-17.

- The informed consent was taken from all participants prior to the inclusion into the study.
- Patients were identified and collected their demographic details and clinical data such as diagnosis, clinical condition; therapeutic data such as name of the drug, dose, route, frequency, duration of therapy and other relevant details by reviewing their prescriptions, medical records and by interviewing the patients and/or care givers.
- These information were recorded on a pre-structured, customized data collection form.
- In case of OPD holidays, the prescription of that day was assigned to the next working day. A total of 77 cases of both sex were included.
- The prescription were analysed for the following parameter:

1) Gender distribution of patients: Patients were analysed as to number of male and female patients with psychiatric disorders included in the study.
2) Age distribution of patients: The patients taking part in this study were classified into following age groups: >20, 21–29 years, 30–49 years, 49–60 years, 60-69 years and >70 years of age.
3) Most common psychiatric diseases
4) Most commonly prescribed class of drugs
5) Most commonly prescribed drug
6) Number of drugs per prescriptions

- The medication adherence of patients to psychotropic medication for the months was assessed by using Drug Attitude Inventory scale-30 and Clinician Rating Scale.

Statistical analysis

The data were analyzed by using Statistical package for social service (SPSS) 19th version. Categorical data were presented as frequency and percentage. Qualitative data will be presented as measures of central tendency and dispersion. The mean score of DAI-30 and clinician rating scale was compared by using student t test.

RESULTS

The data collection form was analysed for various parameters like socio-demographics, diagnosis, and prescription pattern of psychotropic drugs. Medication adherence was assessed for Bipolar disorder patients and schizophrenic patients by using CR scale and DAI-30 scale.

1. Distribution of patients according to Age groups (n=77)

In our study participants were grouped into various age groups. Out of 77, subject 24 (31.23%) belongs to 30-39 year, followed by 19(24.63) belongs to 40-49 years.

Table No 1: Distribution of patients according to Age groups.

Sl. No	Age	No of patients	Percentage
1	<20	4	5.19
2	20-29	18	23.38
3	30-39	24	31.23
4	40-49	19	24.63
5	50-59	7	9.09
6	60-69	4	5.19
7	>70	1	1.29
Total		77	100%

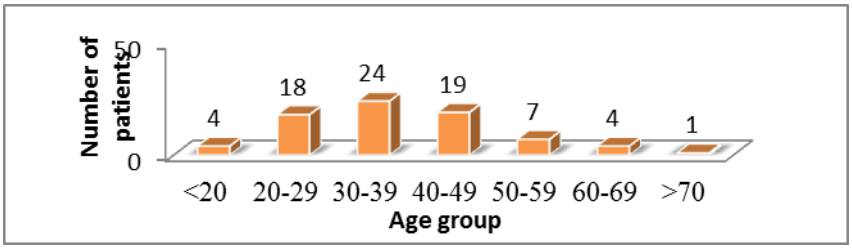

Fig. no. 1: Distribution of patients according to age group.

Distribution of patients according to gender(n= 77)

Out of 77 subjects 43 (55.85%) were male and 34(44.15%) were female. The study shows that males are suffering from mental disorders than females.

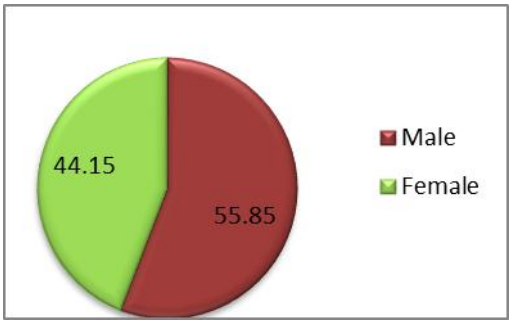

Fig. no. 2: Distribution of age according to gender (n=77).

Number of drugs prescribed per prescription (n=77)

Out of the 77 patients were monitored, 31 patients (41.25%) were prescribed three drugs, 26 patients (33.76) were prescribed two drugs, and three patients were prescribed more than five drugs and further given Table no 3 and Fig no 3.

Table no 3: Distribution of number of drugs per prescription (n=77).

Sl.no	Number of drugs prescribed	Number of patients	Percentage
1	1	4	5.19
2	2	26	33.76
3	3	31	40.25
4	4	13	16.9
5	5	3	3.90
6	>5	0	0
	Total	77	100%

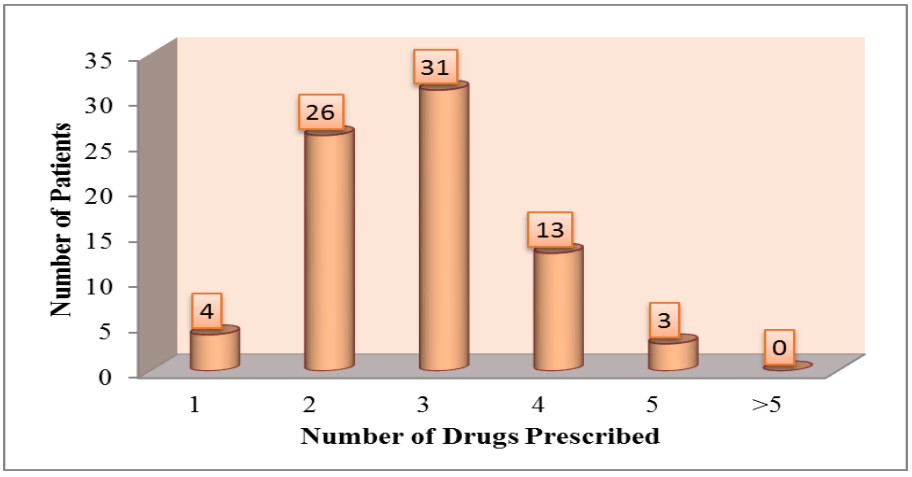

Fig. no. 3: Distribution of number of drugs prescribed per prescription.

Diagnosis-wise distribution of Psychiatric disorders

Out of the 77 prescription were monitored, schizophrenia was found to be the most common disorders encountered 24(26.62) followed by bipolar affective disorder 12(14.81%).

Table no 4: Diagnosis- wise distribution of psychiatric disorders (n=77).

Sl.no	Diagnosis	Total number	Percentage (%)
1	Depression	12	14.81
2	Bipolar mood disorder	12	14.81
3	Anxiety	11	13.58
4	Schizophrenia	24	29.62
5	Psychosis	6	7.40
6	Obsessive compulsive disorder	7	8.64
7	Dementia	0	0
8	Social phobia	3	3.70
9	Somatization disorder	2	2.46
10	Others	4	4.98
	Total	81	100

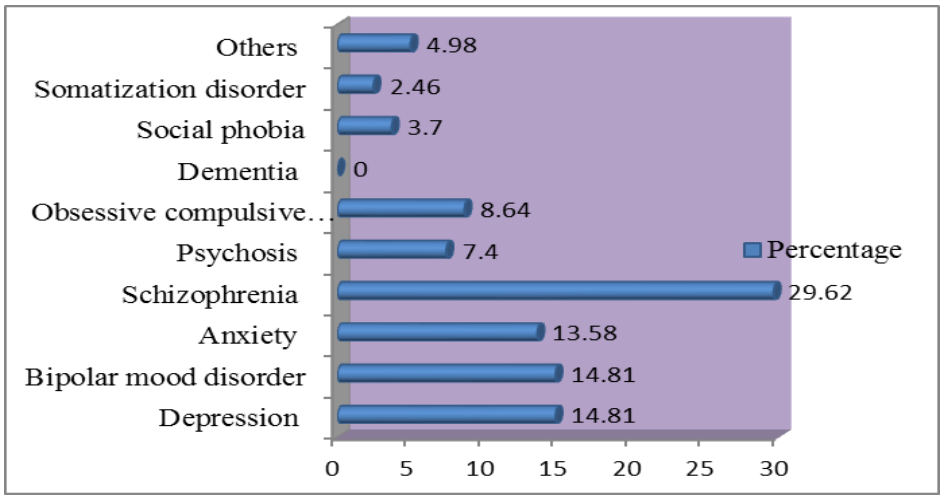

Fig no 4: Diagnosis wise distribution of psychiatric disorders.

Distribution of drugs prescribed in psychiatric OPD

The prescribing frequency of antipsychotics was 32.72% (n=72), thus being the most commonly prescribed categories of psychotropic medications followed by anti- depressants 23.18% (51) and antianxiety agents 15.45% (34).

Table no 5: Distribution of drugs prescribed in Psychiatric OPD.

Sl.no	Categories	Total number	Percentage (%)
1	Anti-anxiety agents	34	15.45
2	Anti-depressants	51	23.18
3	Anti-psychotics	72	32.72
4	Anticonvulsants	20	9.09
5	Antiparkinsonian	4	1.81
6	Antihypertensive	7	3.18
7	Gastroprotective	17	7.72
8	Miscellaneous	15	6.85
	Total	220	100%

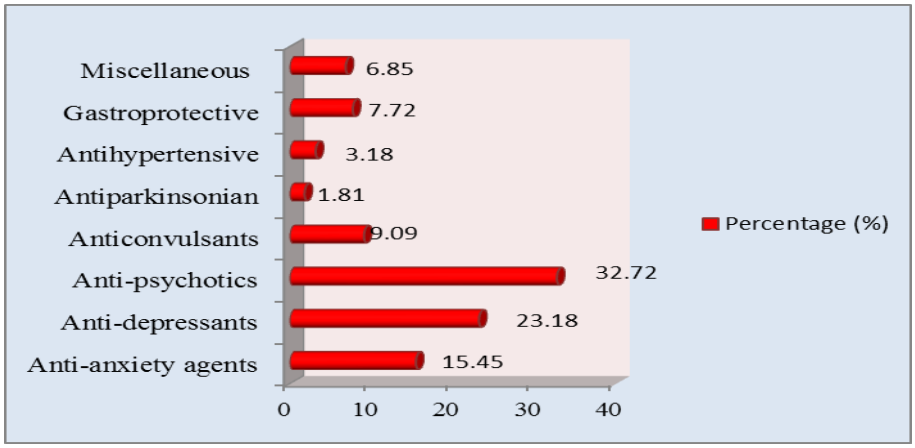

Fig no 5: Distribution of drugs prescribed in psychiatric OPD.

Assessment of medication adherence in BPAD patients (n=12)

Out of 12 BPAD patients 5 were considered good adherent and 7 were poorly adherent.

Table no 6: Distribution of BPAD patients based on medication adherence.

Adherence	No of patients	Percentage (%)
Good adherant	5	41.6
Poor adherent	7	58.4
Total	12	100%

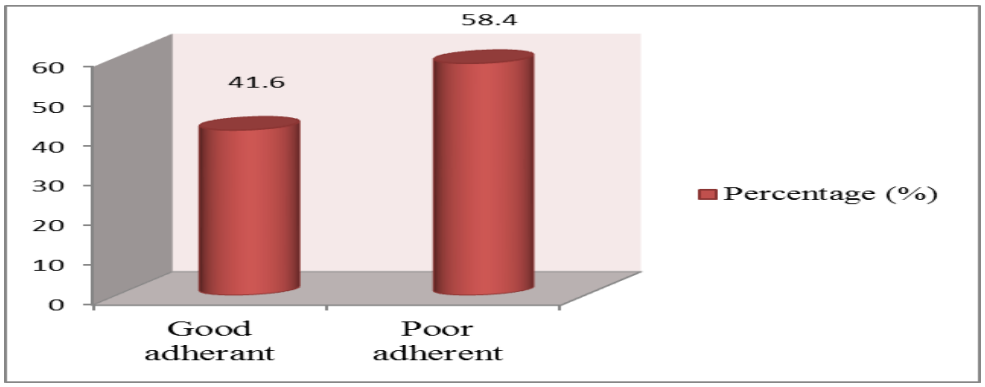

Fig no 6: Distribution of BPAD patients based on medication adherence.

Assessment of overall means score of DAI-30 scale and CR scale in BPAD patients

As per clinician rating scale of drug adherence the overall mean score of adherence was found to be of 4.17(1.89) suggesting patients are good adherant and as per DAI-30 the mean score of drug adherence for BPAD patients was 0.83(11.09) suggesting that patients are poorly adhere. The overall mean score for BPAD patientsas per CR scale and DAI-30 scale are represented in table no 7 and figure no 7.

Table no 7: Distribution of overall means score of DAI-30 scale and CR scale in BPAD patients.

Scale	Mean(SD)	T value	P value (CI=95%)	SEM
CR scale	4.17(1.89)	7.51	0.000(sig)	0.54
DAI-30 scale	0.83(11.09)	0.27	0.78(not sig)	3.20

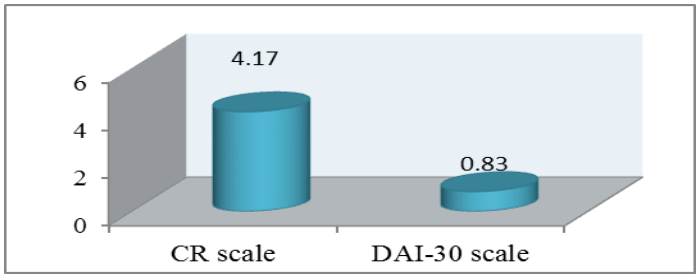

Fig no 7: Distribution of means score of DAI-30 scale and CR scale in BPAD patients.

Assessment of medication adherence in Schizophrenic patients (n=24)

Out of 24 (n=24) schizophrenic patients 50% were good adherent and 50% were poorly adherent. Results are illustrated in graph and table.

Table no 8: Distribution of schizophrenic patients based on medication adherence.

Adherence	No of patients	Percentage(%)
Good adherant	12	50
Poor adherent	12	50
Total	24	100%

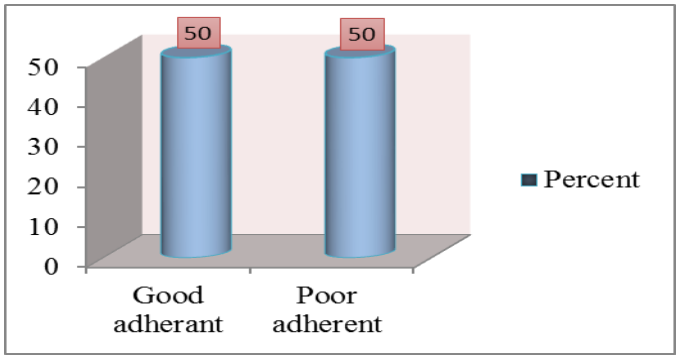

Fig no 8: Distribution of schizophrenic patients based on medication adherence.

Assessment of overall mean score of DAI-30 and CR scale in Schizophrenic patients

The mean score of CR scale (4.21) suggesting that patients are good adherent whereas mean score DAI-30 (0.54) suggesting that patients are poorly adhering.

Table no 9: Distribution of overall mean score of DAI-30 and CR scale in schizophrenic patients.

Scale	Mean(SD)	T value	P value (CI=95%)	SEM
CR scale	4.21(1.61)	0.239	0.000(sig)	0.33
DAI-30 scale	0.54 (12.13)	12.61	0.8(not sig)	2.47

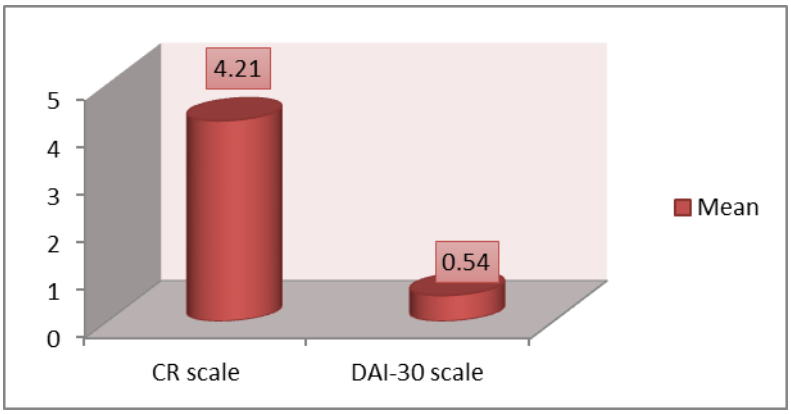

Fig no 13: Distribution of overall mean score of DAI-30 and CR scale in schizophrenic patients.

DISCUSSION

In our study we enrolled 77 patients and the present study aimed to analyze the current prescribing pattern of psychotropic medication in Psychiatric OPD of tertiary unit and to assess the medication adherence in BPAD and schizophrenic patients. The demographic analysis suggested that men received more psychotropic prescriptions than women; this finding is similar to the findings of Tabish et al, conducted a drug utilization pattern in psychiatry outdoor patients at tertiary care teaching hospital of Baster region.[55] The age group of 30-39 years was found to be represented with maximum psychiatric disorders. These results are in line with the study of Mukherjee SH et al.[7]

Analysis of the diagnostic pattern suggested that schizophrenia was the most common psychiatric disorder encountered followed by bipolar disorder, depression, anxiety disorder and obsessive compulsive disorder; this finding is similar to the study of Ghosh et al, conducted a study on antipsychotic prescribing pattern in a tertiary care hospital of eastern India. This analysis is useful to find the precipitating cause for the prescribing medication and also to judge the rationality for such prescribing pattern.[6]

Here we found that antipsychotics, antidepressants drugs are the most commonly prescribed categories of psychotropic medication, followed by antianxiety agents, anticonvulsants in decreasing order. These results are in line with the study conducted by Dutta et al.[50] Out of 77 patients monitored in our study, 31 were prescribed three drugs, while 26 patients were prescribed two drugs. This result was similar to the study of Roopdevi HS et al, conducted a study on pattern of psychotropic prescription in a tertiary care teaching hospital.[46]

Single drug was received by only 5.19% of population suggesting trend of polypharmacy. These results are in line with the studies conducted by Ghosh et al[6], Mukherjee sh et al.[7] majority of patients were prescribed psychotropic drugs from Other studies too consistently found polypharmacy like ours, and trend is consistent even after prescription monitoring. Polypharmacy can lead to poor compliance, drug interaction, adverse drug reactions, and under-use of effective treatments, health care costs and medication errors. In this study we found that majority of the study subjects are prescribed three drugs at a time; thus the range is on the lower side suggesting a trend of polytherapy.

In our study medication adherence was assessed by using the DAI-30scale and CR scale. It was carried out in both BPAD and schizophrenic patients. In BPAD, more patients (58.4%) were adherent to medications compare to schizophrenic patients. The reason for non-adherence was due to poor knowledge, illiterate, socio-economic status forgetfulness etc. A similar study was conducted by Sajotovic et al regarding treatment adherence with antipsychotic medications in bipolar disorder.[11]

In our study also we got significant result, As per clinician rating scale of drug adherence the overall mean score of adherence was found to be of 4.17(1.89) suggesting patients are good adherent and as per DAI-30 the mean score of drug adherence for BPAD patients was 0.83 suggesting that patients are poorly adherent to medications. The mean score of CR scale (4.21) suggesting that patients are good adherent whereas mean score DAI-30 (0.54) suggesting that patients are poorly adherent. In patients with schizophrenia, non-adherence to antipsychotic maintenance treatment leads to psychotic relapse, re-hospitalization, and more frequent clinic and emergency room visits.[21] Non adherence results in significant social and economic burden.[13]

CONCLUSION

Our study revealed that males suffer from psychiatric illness more than their female encounter parts, while the age of onset were almost same in the two genders. The age group

of 30-39 years was represented with maximum psychiatric disorders. Schizophrenia was found to be the most clinically diagnosed psychiatric illness among the study population, closely followed by bipolar disorder, depression, anxiety disorder and OCD respectively. Among the psychotropic medications, antipsychotics and anti-depressants were found to be the most commonly prescribed categories of psychotropic drugs in our hospital. A trend of polytherapy was noted in the study.

Our study shows that half of individuals with schizophrenia were good adherent and half of them were poorly adherent to medication. Out of 12 BPAD patients 7 were considered good adherent and 5 were poorly adherent. Clinical implications of poor adherence include worsening symptoms, relapse, psychosocial deterioration, increased costs and in the worst-case scenario – suicide.

The study provides a baseline data for carrying out further studies on prescribing pattern and medication adherence in a tertiary care unit, which would provide information for improving the utilization and medication adherence of psychotropic drugs in mental health facilities.

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CONFLICT OF INTREST

The authors declare no conflict of interest.

ABBREVATION USED

APA: American Psychiatric Association, BPAD: Bipolar Affective Disorder, CR: Clinician Rating Scale, DAI: Drug Attitude Inventory scale, DSM: Diagnostic and Statistical Manual of Mental Disorders, ICD: International Classification of Drugs, MDD: Major Depressive Disorder, MDP: Major Depressive Psychosis, MMAS: Morisky Medication Adherence Scale.

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