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Original Research Article

A cross-sectional study to assess the drug utilization pattern and pharmacotherapeutic adherence among patients with schizophrenia and quality of life of patient's caregiver in a tertiary care teaching hospital

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ABSTRACT

Background: Schizophrenia is a chronic severe psychiatric illness affecting nearly 0.4 to 1.4% of people in India. Many newer anti-psychotic drugs are used now-a-days in schizophrenia. Poor adherence to the treatment given to patients of schizophrenia is observed very often. Although, the quality of life of schizophrenia patients is very much compromised; at the same time, quality of life of the caregiver is also compromised.
Methods: A cross-sectional Observational study was conducted among patients already diagnosed with Schizophrenia and on treatment, after ethical approval. Data relevant to study variables was collected in a pre-designed case record form. Evaluation of drug utilization pattern was done by WHO core drug prescribing indicators. Medication adherence was assessed through modified Morisky scale. Quality of life of relative or caregiver was assessed through WHO-QOL BREF questionnaire scale.
Results: Patients of 18 years and above were enrolled. Among them, average age was 35.8±5.5 years. In my study, female patients were 64.7% and male patients were 35.3%. Average number of drugs per prescription was 3.8. Drugs prescribed by generic name were around 86.2%. Around 56.9% of drugs were prescribed from national list of essential medicines. Atypical antipsychotics were prescribed in 32% of all prescriptions for Schizophrenia; Whereas Benzodiazepines were prescribed in 19% of all prescriptions. Average Medication adherence score using MMS scale was 3.7±2.2. Patients with high adherence to the medications prescribed were nearly 71% and patients with low adherence to the medications prescribed were 29%. Mean total WHOQOL-BREF score was 75.2±6.5 out of 120.
Conclusions: Most prescribed class of drugs was atypical anti-psychotics. Pharmacotherapeutic adherence among patients with schizophrenia was relatively high. Quality of life of patients' relative or caregiver was impaired to some extent, more impaired in physical health and social relationships domain.

Keywords: Schizophrenia, Drug utilization, Adherence, Quality of life, Caregiver

INTRODUCTION

Schizophrenia is a chronic severe psychiatric illness that affects a person's thinking, behavior, emotions, perception of reality, and how he relates to others. It is characterized by delusions, hallucinations, disorganized speech, catatonic behavior, and negative symptoms.[1] It affects nearly 0.4 to 1.4% of people in India. Its incidence is not varied by gender but males have onset at an earlier age than females.[2] Schizophrenia is considered a classic disorder to assess the effectiveness of antipsychotic medication.[3]

Drug utilization study is done mainly to promote the rational use of drugs. Nowadays irrational drug prescribing

is seen more often. Thus, there are more chances of failure of treatment, adverse effects, and increasing financial burden on patients.

Poor adherence to the treatment given to patients of schizophrenia is observed very often. Adherence is as low as 20% to as high as 89%.[4] Changing the dosing frequencies of the drugs prescribed to them after discharge is also seen with around 30-50% of the patients. Non-adherence to the therapy is a major risk factor for recurrence, re-admission to hospital, or treatment resistance in schizophrenia patients.[5-6] There are four factors that affect adherence: i) Demographic characteristics, ii) symptoms of psychosis, iii) treatment-related variables like long duration, side effects, and other addictions and iv) awareness about the disorder.[7]

Quality of life is a general concept that includes Physical and psychological well-being, social relationships, safety, satisfaction, and perception of life.[8] Though, the Quality of life of schizophrenia patients is very much compromised. At the same time, Quality of life of the caregiver is also compromised, because they also suffer continuous physical and mental stress.[9-11]

Keeping this into consideration, a study was designed to evaluate the drug utilization pattern, adherence to prescribed medications among schizophrenia patients, and the quality of life of the caregiver of these patients.

METHODS

This was a cross-sectional observational study which was conducted over 3 months. The study was initiated only after obtaining approval from the institutional review board. The participants were explained the rationale of the study and only those who were willing to enroll in the study, aged more than and equal to 18 years, irrespective of their sex, and already diagnosed with schizophrenia and on treatment, attending out-patient department of the psychiatry department at tertiary care teaching hospital, Ahmedabad, were included in the study. Patients unable to respond to verbal questions and/or unable to understand study participation, patients or relatives not willing to give written informed consent, and patients first-time diagnosed with schizophrenia were excluded from the study.

The participants were assured of the confidentiality and privacy of the data. Before enrolling patients, written informed consent was taken. The consent form was translated into Gujarati and Hindi languages to make patients understand easily.

The prescription sheets of the participants were evaluated and all the data relevant to the study variables was collected. The information such as participants' basic demographic details, the total number of drugs prescribed, the indication of drugs, dosage schedule of drugs (dose, route, frequency, and dosage form), duration of drug treatment, drugs prescribed by generic names, and the occurrence of any adverse drug reaction (ADR) was collected and entered into a pre-designed case record form. Confidentiality of the collected data of the participants was maintained.

Drug utilization pattern evaluation was carried out using WHO core drug prescribing indicators. Evaluation of the drugs prescribed from the essential drug list was carried out using the national list of essential medicines (NLEM) 2022 of India.

To assess medication adherence, 'modified Morisky medication adherence scale' was used. It was translated into Gujarati and Hindi to minimize the language barrier.

The quality of life of the caregiver was assessed with the use of a standard WHO questionnaire (QOL-BREF). The questionnaire was available in Gujarati & Hindi, in addition to English, for patients' convenience. For the subjects who were unable to read and write, the investigator filled out the questionnaire on their behalf with their consent.

The collected data was entered into an Excel sheet, and it was analyzed to determine pharmacotherapeutic adherence, quality of life, and drug utilization pattern using appropriate statistical software.

RESULTS

Total 107 patients were enrolled in our study. Amongst them 69 were females and 38 were males. Mean age of study population was 35.8 years (Figure 1).

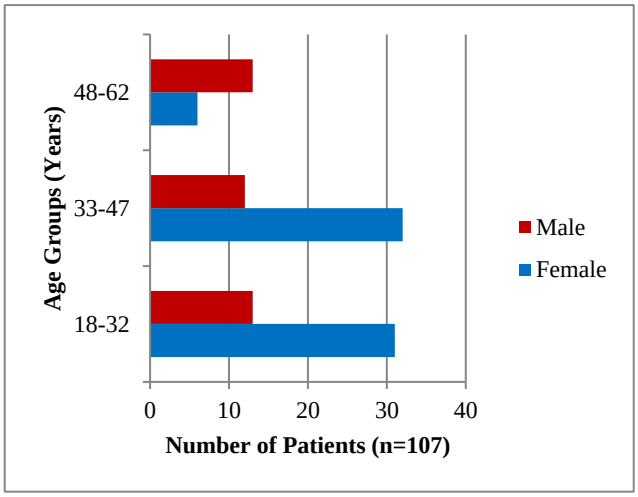

Figure 1: Demographic characteristics of schizophrenia patients.

Average drugs prescribed per prescription were 3.8. Almost 86.2% of drugs were prescribed by their generic name. Only 56.9% of drugs were prescribed from the national list of essential medicines (NLEM) 2022 of India (Table 1).

Among benzodiazepines, clonazepam was the most commonly prescribed drug (13.8%). Among atypical anti-psychotics, aripiperazole and olanzapine were most commonly prescribed (9.3%). None of the patients developed any adverse drug reaction in this study (Table 2).

Most prescribed class of drugs for schizophrenia patients is atypical anti-psychotics (33%) followed by benzodiazepines (19%) and SSRI anti-depressants (12%) (Figure 2).

Proportion of patients who forgot to take their medicine was 41.17%. Almost 58.83% of patients knew the long-term benefits of taking their medicine. Average score of modified Morisky scale was 3.65 out of 6. Patients who were highly adhered to the treatment were 70.59% in our study (Table 3).

Table 1: Evaluation of drug utilization pattern using WHO core drug prescribing indicators.

WHO core drug prescribing indicators	Total number of drugs	Average drugs per prescription/ percentage of drugs/percentage of encounters	WHO's standard derived
Drugs prescribed	409	3.8	1.6-1.8
Drugs prescribed by generic name	352	86.2%	100%
Drug encounters with antibiotics	0	0%	20%-26.8%
Drug encounters with injections	0	0%	13.4%-24.1%
Drugs prescribed from NLEM*	233	56.9%	100%

*NLEM-National List of Essential Medicines

Table 2: Commonly prescribed drugs to schizophrenia patients.

Drug name	Pharma-cological class	Prescriptions, n (%)
Clonazepam	Benzodiazepines	56 (13.8)
Aripiprazole	Atypical anti-psychotic	38 (9.3)
Olanzapine	Atypical anti-psychotic	38 (9.3)
Clozapine	Atypical anti-psychotic	31 (7.7)
Sertraline	SSRI anti-depressant	25 (6.2)
Risperidone	Atypical anti-psychotic	19 (4.6)
Trihexyphenidyl	Muscle relaxant	19 (4.6)
Sodium valproate	Anti-convulsant	18 (4.5)
Fluoxetine	SSRI anti-depressant	15 (3.6)
Diazepam	Benzodiazepines	13 (3.1)
Omeprazole	Proton pump inhibitor	12 (3)
Amisulpiride	Anti-psychotic	11 (2.6)
Chlorpromazine	Anti-psychotic	10 (2.5)
Escitalopram	SSRI anti-depressant	9 (2.1)
Lorazepam	Benzodiazepines	8 (2)
Quetiapine	Atypical anti-psychotic	6 (1.5)

Table 3: Evaluation of pharmacotherapeutic adherence in schizophrenia patients using MMS scale.

Question	Yes (%)	No (%)
Do you ever forget to take your medicine?	41.17	58.83
Are you careless at times about taking your medicine?	47.05	52.95
When you feel better do you sometimes stop taking your medicine?	47.05	52.95
Sometimes if you feel worse when you take your medicine, do you stop taking it?	29.41	70.59
Do you know the long-term benefit of taking your medicine as told to you by your doctor or pharmacist?	58.83	41.17
Sometimes do you forget to refill your prescription medicine on time?	29.41	70.59
	Mean	**SD**
MMS* score	3.65	2.19
	Low adherence (0-2)	**High adherence (3-6)**
MMS classes (%)	29.41	70.59

*MMS-Modified Morisky scale, SD-Standard deviation.

Average MMS score was the lowest (1) in the old age females compared to others (Figure 3).

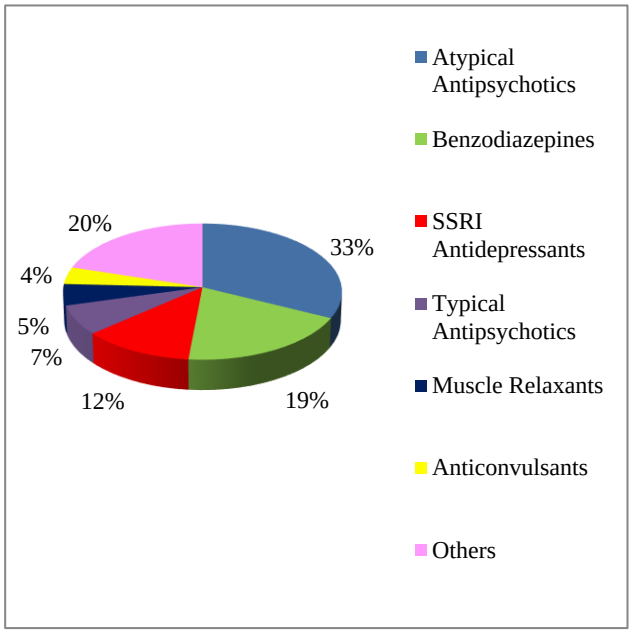

Figure 2: Drug classes prescribed to schizophrenia patients.

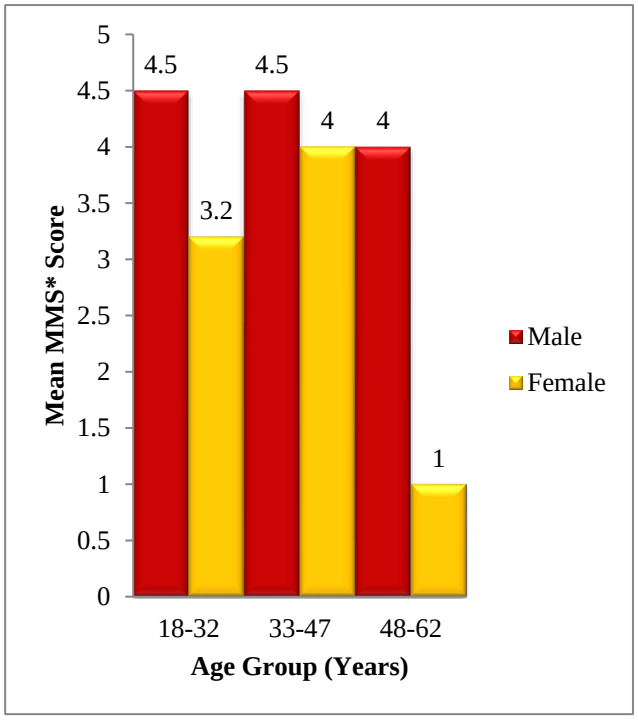

Figure 3: Comparison of medication adherence between various age groups using MMS scale.

The mean score of WHO-QOL BREF scale was lowest (24.41 out of 40) in environmental health domain, followed by physical health domain (20.47 out of 35). Average score of overall QOL was 75.24 out of the 120 (Table 4).

Table 4: Evaluation of quality of life in caregiver of the schizophrenia patients using WHO-QOL BREF scale.

Domain (Total score)	Mean	SD	Range	
			Min	Max
Physical health (35)	20.47	1.72	17	23
Psychological health (30)	20.47	2.06	17	24
Social relationships (15)	10.47	1.72	8	14
Environmental health (40)	24.41	3.88	19	33
Overall quality of life (120)	75.24	6.52	61	94

DISCUSSION

Drug utilization studies in schizophrenia have shown variability in use of treatment modalities for schizophrenia patients. Different studies also showed different results of adherence to medications prescribed in patients with schizophrenia. Some studies have revealed that quality of life in the caregiver of schizophrenia patients is also impaired to a great extent. Taking these into consideration, we initiated a study of drug utilization pattern and medication adherence in patients with schizophrenia and quality of life of the caregiver in a tertiary care teaching hospital.

In this study, female patients enrolled were 64% compared to male 36%. While comparing with a study done by Setiawati et al males enrolled were 60% and females were 40%.[12] Here, the most common age group was young adults, which is comparable with similar studies.

In context of WHO core drug prescribing indicators, our study showed that, out of 409 drugs prescribed to total 107 patients, 352 drugs (86.2%) were prescribed by their generic name. Average 3.8 drugs were prescribed per prescription. No injectable drugs were given and 56.9% of drugs were prescribed from the national list of essential medicines (NLEM).While other drug utilization study done by Shaifali et al showed that 24% of drugs were prescribed by their generic name, average 3.15 drugs were prescribed per prescription, injectable drugs were given in 5.2% of prescriptions, and percentage of drugs prescribed from NLEM was 46%.[13]

This study showed that atypical antipsychotics are most prescribed (33%) drugs to schizophrenia patients. And the most commonly prescribed atypical antipsychotics were aripiprazole and olanzapine (9.3%) followed by clozapine (7.7%) and risperidone (4.6%). Least commonly prescribed was quetiapine (1.5%). Other commonly prescribed drugs were benzodiazepines (19%), SSRI antidepressants (12%) and typical antipsychotics (7%). When we compared these results with a study done by Ilyaz et al most commonly prescribed antipsychotic to

schizophrenia patients was risperidone (40.8%) followed by quetiapine (8.62%) and olanzapine (4.02%), least commonly prescribed was aripiprazole (0.57%). And diazepam was given to 42% of patients.[14]

Thus, variations are seen in prescribing practices in schizophrenia patients.

In this study, Majority (71%) of patients were highly adherent to the treatment. Our study showed the least adherence to the prescribed medications among older age group females. When we compared this with a study done by Bhushan et al least medication adherence was seen with middle aged patients (71%) and with males (79%).[15]

This study showed the mean score of WHO-QOL BREF scale was the lowest (24.41 out of 40) in the environmental health domain, followed by physical health domain (20.47 out of 35) and higher in psychological health domain (20.47 out of 30) and social relationships domain (10.47 out of 15). On comparing with study done by Prakash et al we found that lowest mean score was 13.15 out of 40 in the environmental health domain, followed by 14.20 out of 35 in the physical health domain, 13.75 out of 30 in psychological health domain and it was highest in social relationships domain (13.70 out of 15).[8] Most affected was their environmental health domain. This includes feeling of safety, healthy environment, enough money, opportunity for leisure activities, condition of living space, access to health services and transport. Least affected was their social relationships domain, which includes personal relationships, sex life and support from friends.

CONCLUSION

This study shows that the newer drugs like atypical antipsychotics are the most prescribed ones for the treatment of schizophrenia for their better safety and tolerability profile. Despite less use of essential medicines, prevalence of generic prescribing was high. Most of the patients had high medication adherence, which shows good awareness among patients. The caregivers of schizophrenia patients also have impact on their quality of life. More studies on larger population need to be done for better understanding of use of different medicines and their therapeutic adherence in schizophrenia patients and how it affects the quality of life of patients and also their caregivers.

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