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Original Article

Clinical Pharmacist Led Approach on Enhancement of Medication Adherence Resolving the Drug Related Problems with Selective Serotonin Reuptake Inhibitors among the Patients with Psychiatric Illness. A Prospective, Pre and Post Non-Randomised Interventional Study

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ABSTRACT

Introduction: Non-adherence is one of the most common barriers to the successful completion of treatment and it can be worst in psychiatric patients. **Objectives:** To assess, compare and resolve drug-related problems and medication adherence among psychiatric patients with SSRI and to assess the association between non-adherence and drug-related problems. **Materials and Methods:** In this prospective, non-randomized interventional study 90 psychiatry patients which were on SSRI treatment of both gender, aged more than 18 years were included. Written informed consent was obtained from the patient prior to enrol in the study. **Results:** Out of 90 patients enrolled, 51 (56.7%) patients reported DRPs and after pharmacist intervention, it was reduced to 26 (28.9%). Results showed a significant association between drug-related problems and medication adherence. Baseline and follow-up MARS scores are compared and found that there is a significant increase in the adherence score of patients after pharmacist intervention. **Conclusion:** This study results show that through proper patient education it is possible to improve medication adherence and to optimize medication use, which may reduce the DRPs. It will help eventually help to decrease drug-related morbidity and mortality.

Keywords: Medication adherence, Drug Related Problems, SSRI, Mood disorders, MARS.

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INTRODUCTION

Psychiatry illness or mental illness is a group of diseases related to the changes in the emotion and thinking behaviour which affects the overall productivity of individuals.[1] It is very important to accept the fact that mental illness is just another medical condition like hypertension or hyperthyroidism which can be treated or controlled. Even though it's challenging to live with mental illness, many people continue to lead a normal life with proper treatment.[2] According to the recent studies, one in every four people suffers mental illness at some point of their life[3] and when comes to India, it is one in every seven people. Also there is a two fold increase in mental illness cases during the last decade making it as one of the common health issue.[4]

Treatment is mostly consisted of psychotropic drugs and it takes several weeks to months to notice the effect. For that adherence to the treatment is important. Medication adherence is the involvement of patient without any compulsion to the planned treatment regimen to produce a positive result.[5] Non-adherence is one of the most common barriers for the successful completion of treatment and it can be intentional or unintentional. Studies show that more than half of the patients (52.9%) were not adherent to the treatment and adherence is significantly lower in antidepressant treated patient.[6] There is no ideal or accurate method to measure the adherence rate, but there are some direct and indirect measures to do it. Direct measures include detection of drug or biological marker in a biologic fluid and indirect measures includes pill count, questionnaires and adherence scale. Factors affecting adherence are related to each other and if all health-care professionals who are involved in the treatment work

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together and find out the exact reason behind the non-adherence, it can improve patient adherence towards the treatment.[7]

SSRI class of medications is prescribed more compare to other class of antidepressants and it is considered as the first choice of medication for most of mood disorders because of the low number of side effects.[8] A 6 year study conducted regarding use of antidepressant and adherence of patient taking SSRI at Italy showed that only 23.8 of patient is adherent to the treatment and a multidisciplinary approach is needed to improve the adherence of patient. Researches done in this field showed that that side effects can increase the non-adherence.[9]

Drug Related Problems (DRP) is one another concern of medical practitioners. Drug Related Problems (DRP) is a broader term which includes all problems related to drug use. DRPs have been classified in number of ways. In this study PCNE classification is used which has been updated regularly and the latest version is 9. Drug related problems, causes and intervention is classified and sub classified separately in this system.[10] Out of this, patient and drug related problems are main two reasons for non-adherence. Education, polypharmacy, comorbidity, duration of treatment, financial status has a significant role in the adherence pattern of patient.[11] A multidisciplinary intervention in needed to prevent DRPs and increase medication adherence. Studies showed that clinical pharmacist can play a significant role in identifying and resolving these above cited issues. So in this study, we aimed to assess, compare and resolve medication adherence and DRPs among the psychiatric patients with SSRI and to assess the association between the non-adherence and DRP.

MATERIALS AND METHODS

A Prospective, Non-randomized interventional study was conducted at Department of Psychiatry, KLEs Dr. Prabhakar Kore Charitable Hospital, Nehru Nagar, Belagavi for a duration of 6 months during October 2019–March 2020. Permission was obtained from KLE College of Pharmacy ethics committee on human subject (Ref.No.KLE/COP/522/201920) to carry out the study. The sample size was calculated as 90 (P= 34%, d= 10%) and study included psychiatry patients on SSRI treatment of both gender, aged more than 18 years. Written informed consent was obtained from patient prior to enrol in the study. The detailed procedure of the study is depicted in Figure 1.

Data Collection

Patient information was collected from medical records and through interviews, and entered in the pre-validated data collection form (google forms). The data was then imported into the statistical package SPSS 22.0 Version for statistical analysis.

RESULTS

The study was conducted in the psychiatry ward of tertiary care hospital. During the study 90 patients were enrolled, out of which 45 (50%) was male and other 45 (50%) was female. The majority of population 32 (35.6%) belongs to 18–30 age group, followed by 26 (28.9%) from 31-40; 18 (20.0%) >=51; 14 (15.6%) from 41-50 year of age group. Among all the enrolled patients, 6 (6.7%) reported mental illness related history among their family members. Out of 90, 50 patients reported negative thinking. Majority of patients reported insomnia 63 (70%), 10 (11.1%) were having hypersomnia problem and 17 (18.9%) were having normal sleep cycles Table 1.

Acceptance of clinical pharmacist intervention: Intervention was proposed to patients, interns and doctors related to DRPs and lifestyle modification. Out of 90 patients, majority of the patients (70%) accepted and fully implemented the intervention, 9 (10%) patients accepted and partially implemented, 2 patient accepted but not implemented, 16 (17.7%) didn't agree with intervention Figure 2. Using Wilcoxon matched pairs test baseline and follow-up MARS scores are compared and found that there is significant increase in the adherence rate of patients (p=0.03) as

Table 1: Socio-demographic and clinical characteristics of patients.

Age groups	No of respondents	% Of respondents
<=30yrs	32	35.6
31-40yrs	26	28.9
41-50yrs	14	15.6
>=51yrs	18	20.0
Total	90	100.0
Gender		
Male	45	50.0
Female	45	50.0
Total	90	100.00
Family history		
No	84	93.3
Yes	6	6.7
Total	90	100.0
Thoughts		
Negative	50	55.6
Positive	40	44.4
Total	90	100.0
Sleep		
Hypersomnia	10	11.1
Insomnia	63	70
Normal	17	18.9
Total	90	100.0

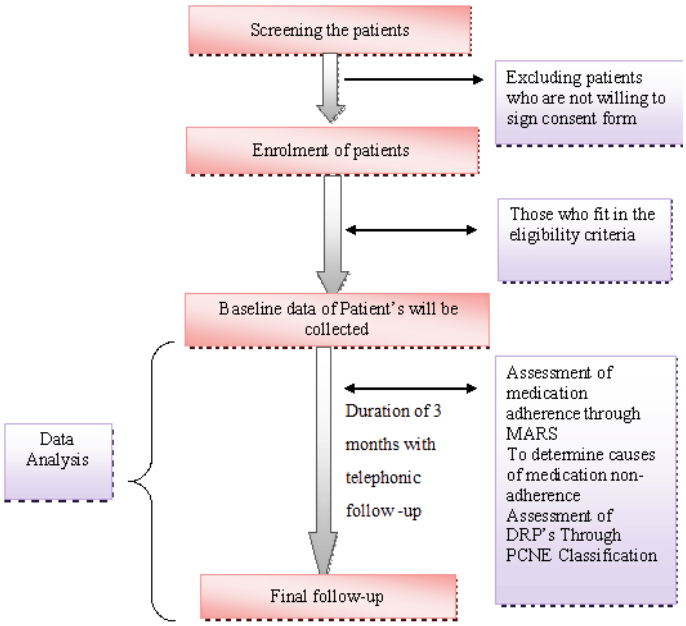

Figure 1: Procedure of the Study

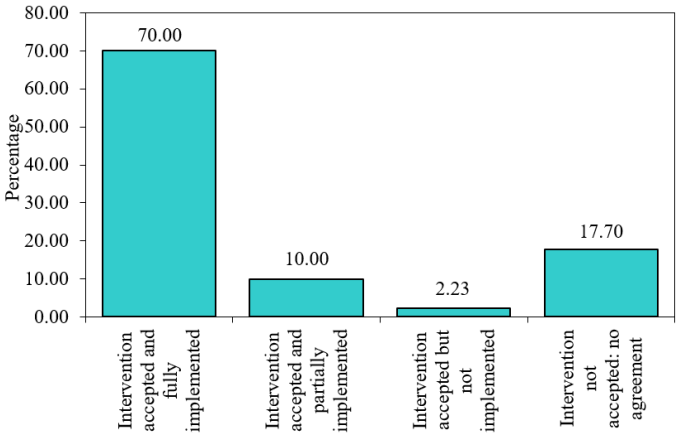

Figure 2: Follow-up clinical pharmacist intervention.
Using Wilcoxon matched pairs test baseline and follow-up MARS scores are compared and found that there is significant increase in the adherence rate of patients (p=0.03)

shown in Table 4.. According to PCNE classification, causes for DRPs were identified. Out of 90 patients, 43 (47.78%) patients reported DRPs as shown in Table 2. Out of 90 patients enrolled, 51 (56.7%) patients reported DRPs and after providing patient education through counselling, only 26 (28.9%) reported DRPs. Using Mc. Nemar Table 3. There was a significant reduction in ADR during follow-up compared to baseline data (p= 0.0001). Results showed a significant relation between DRPs and medication adherence (p= 0.007 and p= 0.001) Table 5.

DISCUSSION

Non-adherence and drug related problems are two major issues in the healthcare system. Patients like who are on long-term treatment generally shows high non-adherence and DRPs. It is a big challenge for psychiatrists to make sure there are adherent. SSRIs class of drugs are considered as safe and used widely as a first line treatment for mood disorders, but there is chance of DRPs at the initiation of treatment and can lead to non-adherence. It is very necessary to find the sources of non-adherence and DRPs. Addressing these issues will be helpful than changing the treatment goals or medicines. In this study 90 patients who are taking SSRI class of drugs were assessed for medication adherence and DRPs.

55.6% of patients reported negative thoughts which show an association between mood disorders and thoughts. Out of 90 patients, 73 showed disturbed sleep cycle. 70% (63) patient was suffering with insomnia and 11.1% (10) patients with hypersomnia. These results are similar to the findings by the study conducted by Kostev K, *et al.*[12]

Side effects are comparatively less in SSRI and considered as one of the safe class of antipsychotics. Drug related problems are commonly seen due to mistake from mistakes from health care professionals and patients. In this study DRPs are identified and as per PCNE classification it comes under patient related

Table 2: Causes of DRP.

Sl. No	Primary domain	Code V9.0	Cause	No. of patients (%)	Total (%)
1	Patient related	C7.1 C7.10	1.Patient takes less drug or does not take the drug at all. 2. Patient unable to understand instructions properly.	21 (23.34) 21 (23.34)	42 46.68
2	Dose selection	C6.3	Drug over -administered.	01 (1.12)	1 (1.12)
3	No DRPs			47 (52.23)	47 (52.23)

Table 3: Comparison of Status of Baseline DRPS and follow-up DRPS.

DRPs Status	Baseline DRPs		Follow up DRPs	
	No. of respondents	% of respondents	No. of respondents	% of respondents
No	39	43.3	64	71.1
Yes	51	56.7	26	28.9
Total	90	100.0	90	100.0
Mc Nemar chi-square, p=0.0001*				

*p<0.05

Table 4: Comparison of scores between baseline and follow-up.

Baseline levels	Follow-up levels				
	Low	Medium	High	Total	%
Low	3	0	5	8	26.67
Medium	1	1	6	8	26.67
High	1	0	13	14	46.67
Total	5	1	24	30	100.00
%	16.67	3.33	80.00	100.00	
Wilcoxon matched pairs test, Z= 2.1664, p=0.0302*					

Table 5: Comparison of Baseline DRPS Status with Baseline and Follow-up With Levels of Adherence

Levels of Medication Adherence	No DRPs	%	Yes DRPs	%	Total	Chi-square	*p*-value
Baseline							
Low adherence	7	7.78%	10	11.12%	17	10.011	0.007*
Moderate adherence	11	12.23%	5	5.56%	16		
High adherence	46	51.12%	11	12.233%	57		
Total	64	71.1%	26	28.9%	90		
Follow-up							
Low adherence	0	0.0%	8	8.89%	8	47.900	0.001*
Moderate adherence	0	0.0%	8	8.89%	8		
High adherence	64	71.1%	10	11.12%	74		
Total	64	71.1%	26	28.9%	90		

causes that is "patient takes less drug than prescribed". This result is similar to the Lucca JM[11] *et al.* study to see factors affecting medication adherence in psychiatry patients. 51 (56.7%) patients reported DRP during baseline data collection and it reduced to 26 (28.9) during follow-up. Most of the patients accepted and fully implemented (70%) the suggestions given by pharmacist. This results shows through proper education regarding disease and medications, we can significantly increase the adherence of patients towards treatment.

For assessing medication adherence, MARS questionnaire was used and according to the scores adherence rate of patients determined. Scores during follow-up showed a significant increase in adherence rate which indicates the successful implementation of recommendation given during study.

For assessing the association between DRPs and medication adherence chi-squared test was used. Out of 57 high adherent patients, only 11 (12.23%) reported DRP and during follow-up, only 10 out 74 reported DRP. But out 17 non-adherent patients, 10 of them reported DRPs and out of 16 moderately adherent patient, 5 of them reported DRPs during baseline data collection. During follow-up, all 16 non-adherent and moderately adherent patients reported DRPs.

We observed that one of the major cause of DRP was patient was not aware about the importance continuing medication even after symptoms are under control. Other one important cause was skipping medication. It is mainly due to forgetfulness and failing to refill the prescription at proper time. Educating the patient will be helpful at some scenarios like prescription refilling and ignorance due lack of knowledge. But forgetfulness due to disease, financial issues can only be solved with the constant help of healthcare professionals from different fields and a good pharmacoeconomic evaluation.

CONCLUSION

The overall study suggests that low medication adherence rate and drug related problems are comparatively higher in psychiatry and clinical pharmacist can play a significant role with other healthcare staff for overall success of the treatment. Clinical pharmacist can educate patients and optimize medication use, which may reduce the DRPs. It will help eventually help to decrease the drug related morbidity and mortality.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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