EFFECTIVENESS OF CLINICAL PHARMACIST LED COLLABORATIVE APPROACH TOWARDS MEDICATION ADHERENCE IN PATIENTS WITH SCHIZOPHRENIA RECEIVING ATYPICAL ANTIPIPSYCHOTICS AT TERTIARY CARE HOSPITAL

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ABSTRACT

Medication adherence is one of the most important factors that determine therapeutic outcomes in the patient’s illness. Adherence is a major problem in the patients with psychotic disorders and constitutes additional challenges. Eight-item Morisky Medication adherence is based on medication adherence questionnaire wherein, first seven items are Yes/No responses while the last item is 5-point Likert response. The additional item concentrates on medication-taking behaviors, especially in forgetfulness, so barriers to adherence can be identified more clearly. Objective: The study was to assess the effectiveness of the collaborative approach by clinical pharmacist towards medication adherence in schizophrenia patients with Atypical Antipsychotics. Methods: The study was prospective, randomized and interventional study comprising of total 60 patients, 30 in each arm i.e. control and interventional for a duration of 6 months with follow-up after 2 months. Result: The resultant data analyzed for adherence score in the interventional group (baseline: follow-up) was p=0.05 representing as clinically as well as statistically significant. Conclusion: The study helps to cut through the stigma associated in the Indian educational disciplinary wherein the pharmacist should represent themselves as a part of an interdisciplinary solution that resolves the gaps by helping diligently to adhere to the medication-related services. This enhances the pharmacotherapy outcomes which facilitates the rapid retrieval of improved mental health.

Keywords: Collaborative, Medication Adherence, Schizophrenia, Atypical Antipsychotics, Morisky Medication Adherence Scale-8, Randomized, Prospective Study.

INTRODUCTION

The collaborative care model for psychiatric disorders brings many of the components integrated into the medical setting firstly the systematic psychiatric assessment, secondly the use of a non-physician care manager to perform longitudinal symptom monitoring, treatment interventions, and care coordination, and lastly the specialist-provided the stepped-care recommendations. The collaborative care interventions have been assessed in the broad aspects of care settings (area, environments) and offer a way of increasing quality of life of patients, improving the health of patients and reducing the cost of medications. [1] The pharmaceutical care functions such as patient education, the patient follow-up to track depression outcomes, management of adverse events, medication adherence to treatment and adjustment of treatment plans for patients who do not improve. [2]

Schizophrenia in Greek ‘skhizein’ ‘to split’ and ‘pherein’ ‘mind’, is a chronic and severe mental disorder that affects how a subject think, feels and behaves. It is referred by the fifth Diagnostic Manual of Mental Disorders (DSM-V) as individuals suffering from characteristic psychotic symptoms and a noted deterioration in adaptive functioning. Two or more from a list of symptoms must be present, with at least one of them being delusions, hallucinations, or disorganized speech. The time frame is an active phase of the disorder lasting approximately one month and these symptoms, with possibly less intensity, continuing for the duration of at least six months. [3] It is one of the most serious of all mental illnesses. [4] The global prevalence of schizophrenia in adults is found to be 0.3% to 0.7% of the population, with variations. [5]

The drug of choice for patients with mental disorders focuses on schizophrenia to control symptoms to allow the return to normal levels of psychological functioning and rapid control of symptoms like agitation, aggregation, delirium, visual hallucinations, etc. The commonly prescribed Atypical Antipsychotics drugs are: Amisulpride, Aripiprazole, Clozapine, Olanzapine, Quetiapine, Risperidone, Zotepine. [6]

Medication Adherence is defined as “the extent to which a patient’s medication-taking behavior coincides with the intention of health advice he or she is given”. It is one of the most important factors that determine therapeutic outcomes, mostly patient’s illnesses. [7] Non-adherence is a very common problem in patients with psychotic disorders and constitutes additional challenges that increase its risk. Non-adherence is likely to remain a major public health problem despite treatment advances. However, increasing knowledge about factors affecting adherence and using novel technologies can enhance its early assessment and adequate management. [7]

The study was to assess the effectiveness of the collaborative approach involving clinical Pharmacist-Psychiatrist in the patients on Atypical Antipsychotics towards the medication adherence of schizophrenic patients using the MMAS-8 Questionnaire.
MATERIALS AND METHODS

Location of the study

This study was conducted at KLES Dr. Prabhakar Kore Hospital and Medical Research Centre for the duration of six months. The hospital is located in Belagavi, the second capital of Karnataka state, India. The hospital is a 2000 bed capacity tertiary healthcare center. It receives consultation from primary and secondary healthcare facilities in the state as well as from the neighbouring states.

Subjects

The sample size was calculated as per the Department of Psychiatry, Schizophrenic patients flow statistics is 15 per month. So the total sample size of the study is 60 patients 30 in each group. The sample consisted of one hundred and sixty-five (N=165) patients with schizophrenia were screened and out of which 62 subjects were randomly selected based on the table of random number on each inpatient and outpatient visit. A subject was enrolled if he/she met the following inclusion criteria: a diagnosis of Schizophrenia and stable on atypical antipsychotics study entry, adults above the age of 18-65 years and who have signed consent. The exclusion criteria were: Adults with cardiovascular diseases specifically CAD, Cardiac Arrest, CHF, Congenital Heart disease, stroke, history of seizures, head injury or brain tumor, liver or kidney disease and mental retardation.

Procedure

Approval for the study was obtained from the Institutional Ethics Committee for Human Ethics of KLE College of Pharmacy, Belagavi. The informed consent was obtained from patients and their Legal representative (LAR). Patients who met the inclusion criteria were recruited into the study after a thorough psychiatric evaluation by psychiatry. The concealed randomization allocation was used to randomize the subjects in the control and interventional groups (Figure 01).

Table 1: Prevalence of Schizophrenic Patients

| Age (years) | Control | Intervention | Total |
|-------------|---------|--------------|-------|
| 18 to 29    | 8(13.33%) | 7(11.66%) | 15(25.00%) |
| 30 to 39    | 9(15.00%) | 9(15.00%) | 18(30.00%) |
| 40 to 49    | 10(16.66%) | 10(16.66%) | 20(33.33%) |
| 50 to 59    | 2(3.33%) | 3(5.00%) | 5(8.33%) |
| More than 60| 1(1.6%) | 1(1.6%) | 2(3.33%) |
| Total       | 30(50%) | 30(50%) | 60(100%) |

Table 2: Demographic data of the patients

| Domains       | Number | %   |
|---------------|--------|-----|
| Age (years)   |        |     |
| 18 to 29      | 15     | 25.00 |
| 30 to 39      | 18     | 30.00 |
| 40 to 49      | 20     | 33.33 |
| 50 to 59      | 5      | 5.00  |
| More than 60  | 2      | 3.33  |
| Gender        |        |     |
| Male          | 34     | 56.66 |
| Female        | 26     | 43.33 |
| Religion      |        |     |
| Hindu         | 57     | 95   |
| Muslim        | 3      | 5    |
| Marital Status|        |     |
| Unmarried     | 17     | 28.33 |
| Married       | 41     | 68.33 |
| Widow         | 1      | 1.66  |
| Divorced      | 1      | 1.66  |
| Socioeconomic Status |    |     |
| Govt. Job     | 2      | 6.66  |
| Private Job   | 18     | 30    |
| Daily Basis   | 2      | 3.33  |
Table 3: Morisky Medication Adherence Questionnaire

| Domains                                      | Control Group n=30 | Interventional Group n=30 | Chi Test | Square | P     |
|----------------------------------------------|--------------------|--------------------------|----------|--------|-------|
|                                              | YES    | NO    | YES    | NO    |       |
| Do you sometimes forget to take your pills?  | 13     | 17    | 10     | 20    | 0.635 | 0.426 |
| Baseline                                     |        |       |        |       |       |
| People sometimes miss taking their medicines for reasons other than forgetting. Thinking over the past 2 weeks, were there any days when you did not take your medicine? | 15     | 15    | 13     | 17    | 0.268 | 0.605 |
| Baseline                                     |        |       |        |       |       |
| Have you ever cut back or stopped taking your medicine without telling your doctor because you felt worse when you took it? | 7      | 23    | 0      | 30    | 7.925 | <0.05*|
| Baseline                                     |        |       |        |       |       |
| When you travel or leave home, do you sometimes forget to bring along your medicine? | 1      | 28    | 0      | 30    | 2.069 | 0.355 |
| Baseline                                     |        |       |        |       |       |
| Did you take all your medicines yesterday?   | 12     | 18    | 6      | 24    | 2.857 | 0.091 |
| Baseline                                     |        |       |        |       |       |
| When you feel like your symptoms are under control, do you sometimes stop taking your medicine? | 25     | 5     | 22     | 8     | 0.884 | 0.347 |
| Baseline                                     |        |       |        |       |       |
| Taking medicine every day is a real inconvenience for some people. Do you ever feel hassled about sticking to your treatment plan? | 30     | 0     | 30     | 0     |       |       |
| Baseline                                     |        |       |        |       |       |
| How often do you have difficulty remembering to take all your medicine? | 19     | 11    | 8      | 22    | 8.148 | <0.05*|
| Baseline                                     |        |       |        |       |       |

* p<0.05

Table 4: Medication Adherence with respect to control and interventional groups

| Levels                  | Adherence | Non-Adherence |
|-------------------------|-----------|---------------|
|                         | Control   | Intervention  | Control   | Intervention  |
| Baseline                | 3(15%)    | 13(21.66%)   | 27(43.55%)| 17(28.33%)   |
| Follow-up               | 9(15%)    | 26(43.33%)   | 21(35%)   | 4(6.66%)     |
| Total                   | 12 (20%)  | 39 (64.99%)  | 48 (80%)  | 21(34.99%)   |

RESULTS

Table 01: Prevalence of Schizophrenic Patients
Of the 165 participants in the study, 105 were screen failure, so the result of 60 subjects was used for analysis. 30 patients were segregated in each control group and interventional group respectively. The analysis for the data was performed only for those patients who completed the study. The 40-49 years age group 33.33% (n=20) were more prevalent to schizophrenia and more than 60 years age group 3.33% (n=2) were less prevalent to schizophrenia (Figure 02).

Table 02: Demographic data of the patients
The disease prevalence was more in male 56.66% (n=34) as compared to female schizophrenic patients i.e 43.33% (n=26). The socioeconomic status stated majorly 35% (n=21) of homemakers and 30% (n=18) of private job seekers were suffering from the disorder in both control and interventional group. In the control group, 10% (n=3) and 6.66% (n=2) were found smoking and chewing tobacco respectively whereas in interventional group 13.33% (n=4) were observed for both respectively. While drinking habits were observed in control for 16.66% (n=5) and 6.66% (n=2) in the interventional group.
Table 03: Morisky Medication Adherence Questionnaire
The domain 2, 3, 6 were clinically as well as statistically significant ($p< 0.05$) whereas domain 1,5,7,8 were clinically significant ($p> 0.05$) but not statistically.

Table 04: Medication Adherence with respect to control and interventional groups
The Adherence in control group at baseline was observed to be $5\%(n=5)$ whereas in follow-up was $15\%(n=9)$ and in intervention group baseline was $21.66\%(n=13)$ and for follow-up was $43.33\%(n=26)$ which reflected total medication adherence of being $64.99\%(n=39)$ for interventional group justifying pharmaceutical care importance. At the baseline level adherence was seen $28.33\%\ (n=17)$ whereas it was observed after pharmaceutical intervention observed to be $64.99\%\ (n=39)$ similarly, non-adherence decreases in the follow-up level.

![Flow-chart of the methodology used in the study](image)

![Prevalence of Schizophrenic Patients](image)
DISCUSSION
Effiong J.H. et.al[11] conducted a study to determine the prevalence of non-adherence in schizophrenic patients and identified factors associated with it. 28.3% of the subjects were categorized as low adherence, 23.4% were medium adherence and 48.3% were on high adherence. The overall prevalence of non-adherence was 51.7% using MMAS. In this study the disease prevalence was more in male 56.66% (n=34) as compared to female schizophrenic patients i.e 43.33% (n=26). The overall medication adherence was found to be more as compared to the above study that is 64.99% for interventional group justifying pharmaceutical care importance.

This study states the collaborative work of pharmacist and psychiatrists in schizophrenia. It was observed that the domain 2, 3, 6 were clinically as well as statistically significant (p< 0.05) whereas domain 1,5,7,8 were clinically significant (p > 0.05) but not statistically. Likewise, in this study, the positive effect of pharmaceutical care was more in the interventional group rather than the control group. Hence, this study indicates that the MMAS-8 is a valid instrument for the assessment of medication adherence in patients with Schizophrenia.

The conducted study shows that, clinical pharmacist collaborative care can enhance the patients’ medication adherence in compared to the control group, which shows that, the involvement of clinical pharmacist in psychiatry settings may lead to integral segment in health care delivery systems.

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