Effectiveness of specific intervention on treatment adherence of persons with mental illness: A pilot study

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ABSTRACT

Context: Treatment nonadherence is one of the major obstacles in recovery even with the availability of a broad range of pharmacological and psychosocial treatments for persons with mental illnesses.

Aims: The aim was to evaluate the effectiveness of specific interventions in improvement of treatment adherence of persons with mental illnesses.

Settings and Design: A quasi-experimental study was conducted at a tertiary mental health care setting in North-east India.

Materials and Methods: Total 30 numbers of patients were selected randomly for the study. Treatment adherence was assessed using the Medication Adherence Rating Scale and a structured Treatment Adherence Checklist. Data were collected before and 1-month after the specific interventions to the patients and their family members.

Results: Result showed a significant improvement in the treatment adherence as verbalized by the patient (paired \( t = 3.973, P = 0.00, df = 29 \)) as well as reported by the family members (paired \( t = 2.94, P = 0.00, df = 29 \)) following the specific intervention.

Conclusion: The study result suggested that specific intervention may be used for a better outcome of treatment for mental illnesses. The findings might be generalized following implementation of the intervention to a larger sample.

Key words: Mental illness, specific intervention, treatment adherence

INTRODUCTION

Nonadherence to treatment is always been one of the biggest challenges for treating the persons with mental illness. A recent report by the World Health Organization revealed that 50% of patients with chronic disease do not take their medication as prescribed.\(^1\) Literature review revealed that 41.2–49.5% persons with schizophrenia were nonadherent to their prescribed treatment.\(^2\) It is estimated that medication nonadherence for unipolar and bipolar disorders ranges from 10% to 60% with median 40%.

Chakraborty \( et \ al.\)^\(^4\) had found that 88% of the patients on antidepressant missed the medication within 25% of days of 3 months period in an Indian setting. The consequences of nonadherence can be devastating in persons with mental illnesses. The risk of relapse increases three to five-fold on stopping antipsychotic medication.\(^5\) The gap of treatment for 1-month or less is found to be associated with 2.8 times risk of admission to hospital in a year, and the gap of more than a month increases the risk by nearly 4 times.\(^6\) Failure in adherence to prescribed medication regimen can lead to disease complications, reduced functional abilities and lowered quality of life.\(^7\) Furthermore, the risk of suicide is found to be 3.75 times higher in persons with schizophrenia who are nonadherent than in those who are adherent.\(^8\)
Treatment adherence can be improved with various measures. Velligan et al. found that Cognitive Adaptation Training such as signs, checklists, alarms, and the organization of belongings to cue improve the medication adherence. Counseling about drug treatment improves the treatment adherence with a significant reduction in clinical symptoms of major depression. Considering the above, need for testing the efficacy of evidenced-based strategies dealing with the issues related treatment adherence in Indian setting was felt. The current pilot study was conducted with the aim to find out the effectiveness of specific interventions to improve the treatment adherence of person with mental illness.

**Objectives**
- To assess treatment adherence in persons with mental illnesses
- To evaluate the effectiveness of specific interventions on treatment adherence of persons with mental illnesses
- To find out the association between selected clinical variables and treatment adherence.

**MATERIALS AND METHODS**

**Approach and design**
An evaluative approach with one group pre- and post-test design was adopted.

**Setting of study**
The study was conducted at the out-patient department of a tertiary care mental hospital at North-east India where all the services are provided at free of cost by a multidisciplinary team.

**Sample**
Thirty numbers of persons with mental illnesses and their family members fulfilling the following criteria were selected by systematic random sampling technique.
- Patients diagnosed with psychotic and mood disorders (F20-F39) as per ICD-10 diagnostic criteria
- Family members of persons with mental illnesses staying with and taking care of the patient
- Patients and family members who can read and understand Assamese
- Newly diagnosed cases were excluded.

**Measurement tools**

**Socio-demographic performa**
A structured tool including both socio-demographic and clinical variables of persons with mental illness. Validity of the items ensured before data collection.

**Medication adherence rating scale questionnaire**
It is a 10-item, self-rated, dichotomous answer option questionnaire developed by Thompson et al., 2000. Internal consistency and stability of the tool is found to be 0.75 and 0.68, respectively. The tool was translated to Assamese language, and the internal consistency of the translated tool was found to be 0.669.

**Treatment adherence checklist**
The structured tool consists of 18 quantitative items measuring treatment adherence and five qualitative items enquiring the reasons of nonadherence rated by the family care giver. Content validity of the tool was ensured. Internal consistency of the tool was found to be 0.779.

**Specific intervention**
A pragmatic approach was adopted in the specific intervention. Initially issues of treatment adherence were identified and encouraged the positive consequences in the treatment process, which was similar to enhancing motivation. Psycho-education, explanation of individualistic behavior tailoring or memory cues, demonstration of preparing and use of pill boxes along with distribution of information booklet were included in specific intervention. Memory cues are the prompts that help in recalling the medication taking, e.g., keeping an alarm on mobile, keeping medicines on dining table, marking in the calendar, taking medication after some particular daily activities such as daily prayer, meals, etc. Entire interventions were provided to the patients and their family members in two sessions, in the same day. The specific intervention module was validated by experts from mental health services.

**RESULTS**
Both descriptive and inferential analyses of collected data were done using SPSS 16.0 version.

**Description of socio-demographic and clinical variables of the person with mental illness**
Descriptive statistics for socio-demographic variables showed that, mean age of the persons with mental illness was 39.2 years. There were equal numbers of male and female patients. Of 30 patients, 53.3% were married, 36.7% were unmarried and 10% were either separated or widow. Among the study participants, 90% were Hindu, and 10% were Islam by religion. Majority of the participant, that is, 66.7% belongs to the nuclear family, and 56.7% of participants were educated up to secondary level. It was found that 33.3% of the participants were not doing any job, and 36.7% were home maker. Eighty-seven percent of the participants were from the rural background and 90% subjects were nontribal; 76.7% of the participants reside within 50 km distance from the mental health care set-up. Table 1 illustrates the description of clinical variables of persons with mental illnesses.

**Inferential statistics**
Table 2 demonstrates that medication adherence according
to patients and treatment adherence as observed by family members following the specific intervention were significantly improved (paired \( t = 3.973, P = 0.000 \) and paired \( t = 2.94, P = 0.000 \) respectively).

To find the association, Chi-square test was applied for clinical variables with Medication Adherence Rating Scale (MARS) and Treatment Adherence Checklist scores. All the findings were nonsignificant.

**DISCUSSION**

**Demographic and clinical variables**

Mean age of the participant in the current study found to be little less than existing evidence of mean age 43.57 years in persons with schizophrenia who had received family psycho-educational intervention for treatment compliance.\(^{[13]}\) Current study found equal numbers of male and female with mental illness whereas Ran et al.\(^{[13]}\) had found the majority in female group (60.7%). Majority of the participants in the current study were found to be married which is similar with the findings of the study conducted by Ran et al.\(^{[13]}\) The mental health care setting conducts community extension clinic twice in every month at the further end of the district, so majority of the participants were from within 50 km distance from the study setting.

**Treatment adherence**

Treatment adherence as measured by the MARS showed increased mean value from 7.2 (standard deviation [SD] 2.11) to 8.3 (SD 1.56) after specific intervention indicating improvement in adherence. Similarly, as rated by the family members, the mean score of Treatment Adherence Checklist increased from 14.77 (SD 2.69) to 16.07 (SD 1.46) after specific intervention. These results are comparable with the result of a study by Montes et al.\(^{[14]}\)

**Effectiveness of specific interventions on treatment adherence**

The result of the current study in improvement of treatment adherence according to patients, as well as their family members, is similar with other studies. A study by Farooq et al.\(^{[15]}\) aimed to evaluate the effectiveness of an intervention involving a family member in improvement of treatment adherence showed similar result where participants in the treatment group had better adherence (67.3%) than control group (45.5%), \( P < 0.02 \). In another randomized control trial by Agara and Onibi\(^{[16]}\) found significant improvement (\( P = 0.0009 \)) in treatment compliance, followed by psycho-education in the experimental group. A study by Ran et al.\(^{[13]}\) showed significant higher treatment compliance in the group receiving family psycho-education along with drug treatment in comparison to the group receiving only drug treatment and patients in the control group (\( P < 0.001 \)).

A study conducted by Swanson et al.\(^{[17]}\) had found that patients who received Motivational Interview along with Standard Treatment showed significant higher proportion of attending outpatient appointments than the who were on only Standard Treatment (\( \chi^2 = 8.87, df = 1, P < 0.0 \)). This result is congruent with the current study where motivational component were included in the specific interventions.

One of the components used in the intervention of the present study was a demonstration of preparation and use of pill box, which is also evidence-based. A systematic review\(^{[18]}\) reveals improved adherence and clinical symptoms, followed by unit-of-packaging of medications prescribed for various communicable and noncommunicable diseases. A randomized control trial\(^{[19]}\) showed significant increased medication adherence (\( P < 0.05 \)) in patients and family members receiving a pill box along with education and pamphlet in comparison to patients receiving only education and distribution of pamphlet.

The current study had found no association between the treatment adherence with socio-demographic and clinical variables of the patients. This result is similar with a randomized control trial by Maddock\(^{[18]}\) where the result showed no demographic variables to be the predictor of medication adherence. Another study by Montes et al.\(^{[14]}\) had found no significant difference in gender, living status, duration of illness between patients with optimal and

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### Table 1: Frequency and percentage of the clinical profile of the person with mental illness (n=30)

| Variables                     | Frequency (n) | Percentage |
|-------------------------------|---------------|------------|
| Clinical diagnosis            |               |            |
| Schizophrenia (F20-F29)       | 25            | 83.3%      |
| Mood disorder (30-F39)        | 5             | 16.7%      |
| Duration of illness           |               |            |
| <10 years                     | 17            | 56.7%      |
| 10 years or more              | 13            | 43.3%      |
| Duration of treatment         |               |            |
| 5 years or less               | 16            | 53.3%      |
| More than 5 years             | 14            | 46.7%      |
| Relapse                       |               |            |
| Continuous illness            | 8             | 26.7%      |
| History of relapse            | 22            | 73.3%      |
| Hospital admission            |               |            |
| No admission                  | 18            | 60%        |
| History of hospital admission | 12            | 40%        |

### Table 2: Mean and SD with paired t value (n=30)

| Pairs                         | Mean | SD  | Paired t value | df  | P    |
|-------------------------------|------|-----|----------------|-----|------|
| MARS pretest score            | 7.2  | 2.11| 3.973          | 29  | 0.000|
| MARS posttest score           | 8.3  | 1.56| 2.94           | 29  | 0.000|
| Treatment adherence checklist pretest score | 14.77 | 2.69| 2.94           | 29  | 0.000|
| Treatment adherence checklist posttest score | 16.07 | 1.46| 2.94           | 29  | 0.000|

SD – Standard deviation; MARS – Medication adherence rating scale
sub-optimal medication adherence with exception to with age and employment status.

Limitations of the study
The current study has few limitations such as weak research design, small sample size and had no control over the type of medication prescribed.

CONCLUSION
Treatment adherence in persons with mental illness is possible to improve with simple interventions like psycho-education, explanation of medication information along with explaining some memory cues. Being the key mental health care team member, the psychiatric nurses can take a leading role to carry on such interventions for a better outcome of treatment for the mental illness.

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