Original article

# Effect of Adherence Therapy on Patient Satisfaction and Medication Adherence among Patients with Schizophrenia

**Arooj Fatima[1], Mariam Naz[2], Ammara Butt[3], Ayesha Rashid[4]**

[1]Consultant Psychiatrist, DHQ Kasur, Pakistan, [2]Senior Registrar, Gujranwala Medical College, Pakistan, [3]Assoicate Professor, Allama Iqbal Medical College, Lahore, Pakistan, [4]Professor of Psychiatry, Fatima Jinnah Medical University, Lahore, Pakistan

***Correspondence to:*** Dr. Arooj Fatima, Email: aroojfatima47@yahoo.com

## ABSTRACT

**Background:** Patients with schizophrenia are commonly found to be non-adherent and non-satisfied with the medication for different reasons. This study aims to determine the effectiveness of adherence therapy, based on techniques of cognitive behavioral therapy and motivational interviewing, on satisfaction and medication adherence among patients with schizophrenia.

**Patients and methods:** The study was conducted in the outpatient Department of Psychiatry, Sir Ganga Ram Hospital Lahore, from March to December 2021. The schizophrenia patients were diagnosed according to Diagnostic and Statistical Manual-5 criteria from the outpatient Department of Psychiatry at Sir Ganga Ram Hospital. Patients who were non-adherent as assessed by Drug Attitude Inventory-10 (score <0) and not satisfied on Patient Satisfaction Questionnaire-18 (score <54) respectively before initiating the study were enrolled and divided randomly into two equal groups of 31 patients each. Baseline DAI-10 and PSQ-18 scores were noted down. Patients in Group A underwent adherence therapy on a weekly basis for six consecutive weeks. In Group B (control group), the standard of care was given (antipsychotics along with psychoeducation) at six weeks, PSQ-18 and DAI-10 scale scores were again noted down and compared for the effectiveness of both interventions were compared by independent t-test, and a p-value of ≤0.05 indicated a difference in effectiveness between both groups.

**Results:** 48.4% of males and 51.6% of females participated in the study. The mean age in Groups A and B was 27±6.07 and 28±6.84 years. The mean DAI-10 score at baseline was -4±2.27 and -3±2.21 and at 6 weeks was 3±3.44 and 0±2.37 (p=0.006), respectively. The mean PSQ-18 score at baseline in Group A vs. B was 37±8.75 and 36±8.62 and at 6 weeks, was 67±13.81 and 43±9.1 respectively (p=0.012).

**Conclusion:** Adherence therapy was more effective than the standard of care in improving patient satisfaction and medication adherence among patients with schizophrenia.

**Keywords:**

Schizophrenia, Medication adherence, Patient satisfaction, Adherence therapy, PSQ-18, DAI-10

## INTRODUCTION

Schizophrenia is a severe psychiatric chronic and disabling illness affecting approximately 24 million people worldwide.[1] In Pakistan, about 1.5% of the population suffers from this ailment.[2] The course of this illness is often accompanied by relapses which are characterized by clinically significant exacerbation of psychotic symptoms, resulting in serious physical, social, and economic consequences, and treatment refractoriness may emerge. Satisfaction towards treatment is accepted as a sensitive criterion to improve clinical outcomes and its multidimensionality is well recognized. If patients are not satisfied with the treatment, this may negatively influence behaviors with regard to their perception, attitude toward therapy, and intention to persist.[3] A comprehensive review has reported that non-adherence to medication in schizophrenia is as high as 40 to 50%. Noncompliance to the prescribed treatment regimen is posing a major challenge to treatment trials and has been recognized as a worldwide problem.[4] When antipsychotic treatment is discontinued, the risk of relapse raises nearly fivefold.[5] Patient-related factors include some demographic characteristics, such as newly starting treatment, younger age at onset of illness, alcohol dependence and other illicit substance use, homelessness, low levels of involvement in social activities, independent housing, and financial constraints with consequent inability to afford co-payments for prescriptions.[6] Intolerable side effects are among one of the major reasons for discontinuing medications. Side effects associated with typical antipsychotics, such as extrapyramidal symptoms, sedation, and elevated prolactin levels, are particularly problematic.[7] Research also suggests that patients value support from prescribers regarding medication, particularly when prescribers provided accurate information about potential side effects of

**Conflict of interest:** The authors declared no conflict of interest exists.
**Citation:** Naz M, Fatima A, Butt A, Rashid A. Effect of adherence therapy on patient satisfaction and medication adherence among patients with schizophrenia. J Fatima Jinnah Med Univ. 2024; 18(2):55-58.

**DOI:** http://doi.org/10.37018/JFJMU/5558

medication, expressed understanding of the patient perspective, and listened to patients' concerns about the medications. the experience of admission to the hospital is an important factor that influences willingness to take medications; the perception of coercion, lack of a voice in treatment decisions, and negative pressure to enter the hospital are all associated with nonadherence to psychiatric medications.[8]

Adherence therapy (AT) is a therapy which is patient centered and focuses mainly on promotion of choices of patients and making a shared decision. To increase adherence, techniques that are derived from cognitive behavioral therapy (such as testing beliefs related to treatment) and motivational interviewing (e.g., exploration of ambivalence of patients towards therapy) are utilized in a plan of treatment that focuses on compliance and management of illness.

Numerous international studies are available on the effectiveness of adherence therapy in patients with schizophrenia in improving compliance and overall patient satisfaction[9,10]. However, the results have been conflicting.[10] Therefore, the aim of the current study was to determine the effectiveness of adherence therapy in improving patient satisfaction and medication adherence in patients with schizophrenia.

## PATIENTS AND METHODS

It was a double-blind, randomized controlled trial conducted in the Department of Psychiatry, Sir Ganga Ram Hospital, Lahore. Sixty-two patients who fulfilled the inclusion criteria were enrolled. Inclusion criteria were patients diagnosed with schizophrenia according to Diagnostic & Statistical Manual-5 criteria (as per operational definition), aged 18 to 40 years (both genders ), able to speak and understand Urdu language, patients who were on stable doses of antipsychotic medication (orally or on depot) for at least four weeks prior to enrollment in the study and patients Criteria for exclusion were patients with comorbid mental retardation, personality disorders, and other medical illnesses (requiring additional treatment), acutely psychotic and violent patients with comorbid substance use, patients who had cognitive deficits at the time of interview as was assessed by mini-mental state examination (MMSE). Written informed consent was taken from all the patients. Demographic details, detailed clinical history was taken from all the patients and findings were noted down on a predesigned proforma. Patient Satisfaction Questionnaire-18 (PSQ-18) score and Drug Attitude Inventory-10 (DAI-10) scores were noted down at the baseline. Patients were then categorized into two equal groups (1:1 allocation) using the randomized block technique, i.e., 31 patients in each group. Concealment was also done by co-investigator-1 using sequentially numbered (unique ID), sealed, and stapled envelopes containing details of the allocated group. Patients in group A (interventional group) received an adherence in addition to already prescribed antipsychotics. Adherence therapy was given every week for six consecutive weeks, and the duration of each session was two hours. Patients in group B (the control group) received treatment according to the standard of care (antipsychotics along with psychoeducation). Psychoeducation was given (group B) at one point in time only.

Data was entered and analyzed using SPSS-23. Data was stratified for age, gender and duration of illness. Post-stratification chi-square test was applied to deal with effect modifiers, and a p-value of $\leq 0.05$ was considered significant. The effectiveness of both interventions was compared by independent t-test, and a p-value of $\leq 0.05$ indicated a difference in effectiveness between both groups. For calculating the effect size of independent samples T-test, Cohen's d was determined by calculating the mean difference between two groups and then dividing the result by the pooled standard deviation.

## RESULTS

The mean age (in years) of the patients in Group A was $27 \pm 6.07$ years, and in Group B it was $28 \pm 6.84$ years. The mean duration of illness in Group A was $5.5 \pm 3.81$ years, and in Group B $6.6 \pm 4.75$ years. In patient satisfaction, the p-value for age was 0.207 and for duration of illness, it was 0.855. In medication adherence, the p-value for gender was 0.290. The mean DAI-10 score at baseline in Group A was $-4 \pm 2.27$, and in Group B was $-3 \pm 2.21$. The mean DAI-10 score at 6 weeks in Group A was $3 \pm 3.44$ and in Group B it was $0 \pm 2.37$. The mean PSQ-18 score at baseline in Group A was $37 \pm 8.75$, and in Group B, it was $36 \pm 8.62$ and at 6 weeks, mean PSQ-18 score in Group A was $67 \pm 13.81$ and in Group B it was $43 \pm 9.1$. Independent t-test applied at baseline score of DAI-10 and PSQ-18 revealed that there was no significant difference between both groups at baseline. However, an Independent t-test applied to compare both groups in terms of mean change in the DAI-10 and PSQ-18 score at 6 weeks revealed that the mean scores on DAI-10 and PSQ-18 at 6 weeks improved significantly in group A compared to the control group as indicated by a p-value of 0.006 and 0.025 respectively. Cohen's d-test to look

Table 1: Comparison of both groups in terms of DAI-10 and PSQ-18 scores and Cohen's D value

| Parameters | Group A (n=31) Mean ± SD | Group B (n=31) Mean ± SD | Levene's test for equality of variance | Cohen's D Value |
|---|---|---|---|---|
| **DAI-10 SCORES** | | | | |
| At baseline | -4±2.27 | -3±2.21 | 0.904 | 1.102 |
| 6 weeks | 3±3.44 | 0±2.37 | 0.006 | |
| **PSQ-18 scores** | | | | |
| At baseline | 37±8.75 | 36±8.62 | 0.923 | 2.010 |
| 6 weeks | 67±13.81 | 43±9.1 | 0.025 | |

for the effect size of the mean difference in scores on DAI-10 and PSQ-18 revealed that the mean differences in terms of these scores were of large effect size as was indicated by d-value of >1 (Table 1). In Group A, 35.5% of patients were satisfied with the treatment compared to 14.5% in Group B. Medication adherence was observed in 38.7% of patients in Group A and 11.3% in Group B. Treatment effectiveness was revealed in 33.9% of patients in Group A compared to 16.1% patients in Group B.

## DISCUSSION

This study results revealed that in Schizophrenic patients, 6 weeks of adherence therapy significantly improved scores on Patient Satisfaction Questionnaire-18 (PSQ-18) and Drug Attitude Inventory-10 (DAI-10) as compared to the standard of care. Adherence therapy's success is important, particularly in patients with psychosis who have poor medication adherence and thus have a high rate of relapse i.e., around 50% to 70% within the initial five years of the disease. This results in higher rates of recurrence, a chronic course of illness, and thus a poor prognosis. The effect of adherence therapy on negative symptoms is because of the technique used in adherence therapy in which patients are encouraged to explore and resolve freely their uncertainties regarding illness and associated behaviors, its treatment, and social issues and helps in increasing their motivation by engaging in such activities which can help them in modification of behaviors related to their mental health and treatment such as adherence to medication, self-care and seeking help.[10]

Chien and colleagues evaluated the effects of adherence therapy in improving adherence in patients with schizophrenia and found that adherence therapy significantly improved scores on the adherence rating scale (p=0.007)[11]. In another study, Chien and colleagues revealed that adherence therapy significantly improved scores on the adherence rating scale at 12-month period after intervention compared to the routine care.[7] This study reported similar findings in terms of the effectiveness of adherence therapy in significantly improving medication adherence (p=0.006) in patients with schizophrenia by improving scores on the DAI-10 compared to the individuals who received treatment as usual. Dahan and coworkers reported that the scores of adherence in the experiment group (adherence therapy) at baseline were 83.66 and at the end of study period were 93.6 (p=0.04) and in the control group they were 89.6 and 92.0 at baseline and end of study respectively (p=1.77). The authors concluded that adherence therapy was better in terms of improving attitude and medication adherence compared to routine care[12] Gray and coresearchers assessed the effectiveness of adherence therapy in terms of improvement in scores of Medication Adherence Questionnaire (MAQ) and revealed no significant effect compared to routine educational program (p=>0.05).[13] Schulz and colleagues described no significant effect of adherence therapy on scores of the Medication Adherence rating scale and DAI (p>0.05).[14] These studies differ from the current study findings. This discrepancy may be explained due to the sample population that was studied. This study mainly included patients with schizophrenia who were non-adherent to medication at baseline, whereas studies by Gray et al. and Schulz et al. mainly enrolled patients who were already adherent to the treatment, and therefore, the margin of improvement following intervention was less. Hence, therefore in these trials significant improvement could not be determined.

Studies conducted previously have yielded variable reports about the effectiveness of adherence therapy with some authors in support of this intervention while others revealing no significant difference compared to the routine care provided. Based on current study results, adherence therapy was found to be significantly effective in terms of improving patient satisfaction and medication adherence.

This study had certain limitations. Firstly, it was carried out at a single center and the sample size was small, so the results cannot be generalized. Secondly, comparison of adherence therapy was not made with

other strategies used to improve medication adherence, so the results cannot be implied on them. Lastly, reasons of non-adherence to medications were not assessed thoroughly such as side effects, lack of insight, affordability issues, and no improvement in symptoms. Future studies are recommended on a large sample size comparing other strategies to improve adherence to validate the current study findings.

## CONCLUSION

The study concluded that adherence therapy was effective in improving patient satisfaction and compliance with medication as compared to the standard of care. It may be employed to improve adherence and satisfaction to treatment in patients with Schizophrenia. Improved adherence and treatment satisfaction can help in reducing the rates of relapse and the overall rate of morbidity and improve the quality of life.

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