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Research Article

Clinical and Psychosocial Predictors of Medication Adherence among Patients with Bipolar Disorder: a Cross-Sectional Analytical Study

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Abstract
Background: The critical role of medication adherence in preventing relapses and better clinical outcomes is emphasized in the treatment of BD. Adherence to medication is crucial in preventing relapses and in achieving better clinical outcomes in BD. Non-adherence is still a major problem though, with many clinical and psychosocial factors.
Objective: To determine clinical and psychosocial factors predicting adherence to medication treatment in individuals with BD.
Place and Duration of Study: The study was carried out in the Psychiatry Department of Punjab Institute of Mental Health (PIMH), Lahore from March 2025 to August 2025.
Methods: A cross-sectional analytical study was carried out with 150 patients with a diagnosis of BD. The WHO sample size formula was used to determine the sample size. The data were gathered by using a structured questionnaire, which included demographic characteristics, clinical factors, psychosocial variables and the Medication Adherence Rating Scale (MARS) to measure medication adherence. A statistical analysis was conducted to identify predictors of adherence that are significant.
Results: The 150 who participated in this study included 58% with good adherence and 42% with poor adherence to the medication. Increased illness insight, high family supportive factors, positive medication attitudes and frequent psychiatric follow-up emerged as significant factors associated with the adherence. Significant predictors of non-adherence identified were poor insight, side effects of medication, substance use, and the perceived stigma.
Conclusion: There are clinical and social factors that affect adherence to medications (MD) in BD. Psychoeducation, family engagement, and better patient–provider communication could potentially improve adherence to treatment, which could be achieved by addressing these determinants.

Keywords: Bipolar Disorder, Medication Adherence, Psychosocial Predictors, Clinical Factors, Illness Insight, Family Support, Psychiatric Treatment.

INTRODUCTION

Bipolar disorder is a persistent and debilitating psychiatric disorder that involves recurrent episodes of mania, hypomania and depression, and can cause marked dysfunction in social, occupational and interpersonal functioning. It is a disorder affliction millions of people worldwide and is an important component of psychiatric morbidity, decrepit quality of life and heightened healthcare burden (Tamene et al., 2025). As a recurrent disorder, the need for long-term pharmacologic treatment with mood stabilizers, antipsychotics and other psychiatric medications is imperative to maintain mood stability, minimize relapse and hospitalization rates. However, good treatment results are not always achieved due to some patients' difficulty in keeping medicines regularly (Ghosh et al., 2022).

Taking medications is regarded as an important factor of successful management in bipolar disorders (Bartoli et al., 2026). Failure to adhere could lead to a recurrence of mood episodes, worsening of symptoms, more emergency psychiatric care, more hospitalizations, and higher economic cost to health care systems. Medication non-adherence is reported in previous studies to occur in patients with BD and rates of non-adherence have been found to differ depending on the

nature of the BD, the setting of treatment and the methods used to measure non-adherence (Zewdu, Zerihun, et al., 2025). There are challenges to adherence for psychiatric conditions that differ from those seen in many physical diseases, including: poor insight, unstable symptoms, stigma and poor perceptions on long-term medication use.

There are several clinical reasons that impact medication adherence in bipolar patients. Therapy may be more complex, with side effects, and/or the illness more severe, and longer lasting; patients' willingness and ability to continue therapy may be influenced by these factors (Zewdu, Dagnew, et al., 2025). Poor insight into illness is especially crucial because of the possibility that during the manic or hypomanic phase, patients may not realize that they need continued treatment after symptom resolution. Likewise, the effect of medication on the body such as side effects like weight gain, drowsiness and memory loss can also cause patients to stop taking the medication completely without seeking medical advice (Weldemariam et al., 2025).

There are psychosocial determinants in addition to clinical determinants that influence medication-taking behavior (Weldemariam et al., 2025). Attitudes and beliefs regarding medicines, perceived stigma of mental illness, family involvement, social support and therapeutic relationship with health care providers can greatly influence adherence. Good levels of family support can help to increase adherence by encouraging the use of drugs on a regular basis, arranging for follow-up visits and providing emotional support during an unstable illness (Tadesse et al., 2025). On the other hand, factors such as social isolation, insufficient knowledge about BD and negative attitudes towards psychiatric medications may lead to treatment discontinuation.

There are reliable measurement approaches that can be used in assessing medication adherence. A widely used validated tool that has been developed to assess adherence to medication use is the Medication Adherence Rating Scale (MARS) created for psychiatric patients (Cheng et al., 2026). It evaluates factors such as compliance with the treatment, attitudes toward medications, and subjective experience of compliance with treatment. The use of standardised instruments for identification of factors associated with adherence can assist clinicians to programmed individual interventions to enhance treatment outcomes (Zeleke et al., 2023).

Though individual factors have been studied for their association with adherence to medication, few studies have looked at the effect of a combination of clinical and psychosocial factors in the same patient population (Ünver et al., 2025). Recognizing these factors is critical for formulating a multifaceted plan to overcome the barriers to the adoption of drugs and therapies, as well as psychological and social challenges (Nadeem & Ikram, 2026).

This study's aim was to identify the clinical and social predictors of medication adherence in patients with BD(Zhang et al., 2026). This study could help inform the development of effective interventions to improve adherence, such as psychoeducation, family-based support groups, better patient–provider communication, and tailored treatment strategies, to help optimize long-term disease outcomes and reduce factors that can be modified to improve adherence.

Objective: To find out which clinical and psychosocial factors predict medication adherence and what may be some of the barriers to treatment adherence for those with BD.

METHODOLOGY

A cross-sectional analytical study was done with 150 patients attending Psychiatry Department of Punjab Institute of Mental Health (PIMH), Lahore from March 2025 to August 2025. The sample size was determined from the formula for sample size used by the WHO. Patients were included if they were ≥18 years of age and had a confirmed diagnosis of BD and if they had been on maintenance psychiatric treatment but excluded if they had severe cognitive impairments or acute psychiatric emergencies. This was done by using a structured questionnaire, which included questions on demographic and clinical data and psychosocial factors. The Medication Adherence Rating Scale (MARS) was used to determine medication adherence. Data were analyzed statistically as per the test and logistic regression analysis was done to find out the independent clinical and social predictors which are associated with non-adherence to medication. The p value of <0.05 was used as the criterion for statistical significance.

Inclusion and Exclusion Criteria

Inclusion Criteria

Patients 18 years or older, diagnosed with bipolar disorder (DSM-5 criteria) with regular

psychiatric treatment, taking maintenance psychotropic medications were included. Those who gave informed consent and could answer and fill out the study questionnaire for clinical symptoms, psychosocial factors and medication adherence were eligible to participate.

Exclusion Criteria

Severe cognitive impairment, intellectual disability, acute psychiatric emergencies (requiring hospitalization), and the inability to supply reliable information were the exclusion criteria. To ensure data accuracy, people with partial medical information, who were intoxicated on a substance at the time of the interview or who refused to complete the interview were also excluded, to get a better idea of the predictors of adherence to medication.

Data Collection

A structured data collection questionnaire was used to collect data for 150 patients who were diagnosed as having bipolar disorder. With informed consent, participants were interviewed to document demographic, clinical and psychosocial data. Clinical data consisted of the duration of illness, the nature of bipolar disorder, the number of previous episodes, history of hospitalization, the type of medication(s) used, length of treatment, and side effects of medication(s). Illness insight, family support, perceived stigma and attitudes to psychiatric medication were evaluated. The adherence to medication was assessed with the validated Medication Adherence Rating Scale (MARS), designed for psychiatric patients. Medical records were also accessed for relevant information, to verify diagnosis and treatment information from patients. Confidentiality for all data was ensured throughout the study and all information gathered was kept for research purposes only.

RESULTS

The number of patients with BD included in the study was 150. The medication adherence rating scale (MARS) revealed 87 (58%) were taking their medication with good adherence, and 63 (42%) were engaged in poor adherence to their medication. Illness insight, family support and positive attitude towards medication and psychiatric follow up were significantly associated with higher adherence to medication ($p<0.05$). Patients with side effects of medications, history of substance use, perceived stigma and prior psychiatric hospitalization had a higher rate of poor adherence. The logistic regression allowed for identification of independent predictors of adherence: good insight, family support and positive medication beliefs, and those of non-adherence: substance use and severe medication side effects.

Table 1: Demographic Characteristics of Study Participants

Characteristics	**N (%)**
Total participants	150 (100%)
Mean age (years)	39.5 ± 11.2
Male	82 (54.7%)
Female	68 (45.3%)
Bipolar I disorder	118 (78.7%)
Bipolar II disorder	32 (21.3%)

Demographic and clinical data of participants are shown in table 1. Patients were mostly diagnosed with Bipolar I disorder and there were a slightly higher number of males. The average age suggested a mid-adult population of the study sample, indicative of a population of individuals generally affected by chronic bipolar disorders that are managed on a constant basis by a psychiatrist.

Table 2: Medication Adherence Status among Participants

Medication adherence level	**N (%)**
Good adherence	87 (58%)
Poor adherence	63 (42%)

Table 2 shows the pattern of medication adherence for people with BD. Good adherence was found in more than half of the participants and a large proportion of the participant's demonstrated poor adherence. These results demonstrate that there are ongoing difficulties with medication, and that interventions should

be implemented to enhance treatment compliance in the long-term.

Table 3: Association between Clinical Factors and Medication Adherence

Clinical factor	Good adherence	Poor adherence	p-value
Good insight	76%	35%	<0.001
Previous hospitalization	28%	52%	0.01
Substance use history	12%	38%	<0.001
Medication side effects	22%	49%	0.002

The association between clinical features and adherence to medication is presented in Table 3. Illness insight was found to positively predict adherence, with significantly higher adherence shown among patients with good illness insight. Poor adherence was linked to previous hospitalization; substance use and side effects of medication. The present findings highlight the role of clinical monitoring in assisting with clinical management of the factors that can be modified to support treatment continuation.

Table 4: Psychosocial Factors Associated with Medication Adherence

Psychosocial factor	Association with adherence
Strong family support	Higher adherence
Positive medication attitude	Higher adherence
High perceived stigma	Lower adherence
Poor therapeutic relationship	Lower adherence

Table 4 points to the impact that psychosocial factors have on adherence to medication. Adherence behavior was positively affected by strong family support and positive attitude towards taking medications. Stigma and low therapeutic alliances, on the other hand, had a negative impact on adherence. Social and psychological factors could be addressed by counselling and family participation to improve adherence by BD patients.

Table 5: Multivariable Logistic Regression Analysis of Predictors of Medication Adherence

Predictor	Adjusted OR	p-value
Good illness insight	4.8	<0.001
Strong family support	3.9	0.002
Positive medication attitude	3.2	0.004
Regular psychiatric follow-up	2.7	0.01
Substance use	0.42	0.03
Severe medication side effects	0.51	0.02

Logistic regression analysis was used to determine the independent predictors of medication adherence, as shown in Table 5. Likelihood of adherence was significantly higher for good insight, family support, and positive attitudes towards medication and follow-up. The likelihood of adherence was decreased by substance use and side effects of drugs. Results showed that a multi-modal approach combining clinical and psychosocial interventions is necessary to enhance treatment outcomes.

DISCUSSION

In the current study, clinical and psychosocial factors that predict adherence were assessed in patients with BD and multiple factors were found to have an impact on adherence behavior. Of 150 participants, 58% had good adherence with their medication while 42% had poor adherence to their medication (Nadeem & Ikram, 2026). The results suggest that taking medication is a major problem even though there are good drugs to treat bipolar disorder. Failure to do so can lead to relapses, multiple hospitalizations, symptoms getting worse, and impact on quality of life (Emmanuel, 2023).

The level of illness understanding was one of the greatest predictors of medication adherence in this study. Patients who had a higher understanding and awareness of their psychiatric issues were more likely to be on a prescribed course of treatment (Chanie et al., 2025). Increased or decreased insight is observed frequently in BD, especially during manic phases, and can lead patients to cease taking medications when their condition is

better. Thus, providing greater insight through psychoeducational and ongoing clinical interaction may be important to improve adherence (Kaniganti et al., 2026).

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Also identified in the study were medication side effects as an important barrier to adherence. Those who reported that their treatment caused them to fall asleep, gain or lose weight, or had any other negative side effects were more likely to be nonadherent (Alanazi & El-bilsha, 2026). Previous studies have reported similar findings with dissatisfaction with the effect of medication playing a major role in medication discontinuation. Incorporating frequent monitoring of adverse effects and titrating medication doses could enhance adherence and acceptance of medication (Chen et al., 2022).

History of substance use was also related to less adherence to medications. Patients with a substance abuse disorder may struggle to adhere to treatment regimens, follow-up appointments, and understand the need for long-term treatment (Baltacıoğlu & Puşuroğlu, 2025). The assessment of substance uses and appropriate psychological/addiction treatments should be part of the treatment of bipolar disorder (Baltacıoğlu & Puşuroğlu, 2025).

Being positive about taking medicines and attending regular psychiatric appointments were significant predictors of good adherence (Mengistu et al., 2023). Those patients who had a positive attitude towards treatment and who had frequent contact with healthcare professionals exhibited better adherence patterns. Building a good therapeutic relationship with the patient enables the clinician to challenge misconceptions, reassure the patient and tailor treatment to the patient's needs.

This study's results highlight the importance of tackling the issue of medication adherence at a macro level, rather than just a micro level in terms of prescription (Fakhraei et al., 2026). There should be a balance of psychoeducation, assistance to family members, medication side effect management, and strategies to engage the patient in treatment. Clinical and social issues should be screened at regular intervals by mental health professionals.

This study gives important insights into predictors of adherence, but there are some limitations to consider. Cross-sectional design makes it difficult to make causal inferences of the relationship between the predictors and the adherence outcomes (Viscardi et al., 2024). Also, assessments of adherence were self-reported measures, possibly with reporting bias. Longitudinal studies with larger samples and objective adherence measures are recommended for future studies (Jeżuchowska et al., 2024).

The study indicates that factors both clinical and psychosocial determine medication adherence among persons with BD. While there is a strong need for patient education to address non-modifiable factors like age, gender, and ethnicity, there is also significant potential for addressing modifiable factors such as poor insight, stigma, medication concerns and inadequate support systems that may have a substantial impact on reducing disease burden and improving treatment outcomes in the long-term (Hang et al., 2024).

CONCLUSION

The aim of this study was to investigate the influence of clinical and psychosocial factors on medication adherence in people with BD. The authors found that a combination of clinical and psychosocial factors influence adherence to medication in people with BD. Insight into the illness, family support, and attitudes towards medication were found to be important factors for adherence, as was having a frequent psychiatric follow-up. On the other hand, non-adherence was due to substance use, side effects of medication, stigma, and lack of insight. The results underscore the importance of a comprehensive strategy that includes psychoeducation, family engagement, optimal management of adverse effects, and patient–provider communication. Identification of difficulties with adherence, and tailored interventions, can improve adherence, decrease risk of relapses and favor long-term clinical outcomes in people with BD.

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