National Journal of Physiology, Pharmacy and Pharmacology

RESEARCH ARTICLE

Medication adherence in schizophrenia: Understanding patient's views

Noor Us Saba Z[1], Sushma Muraraiah[1], Chandrashekar H[2]

[1]Department of Pharmacology, Bangalore Medical College and Research Institute, Bengaluru, Karnataka, India, [2]Department of Psychiatry, Bangalore Medical College and Research Institute, Bengaluru, Karnataka, India

Correspondence to: Sushma Muraraiah, E-mail: sushmamurari@yahoo.co.in

Received: February 06, 2019; **Accepted:** March 02, 2019

ABSTRACT

Background: Schizophrenia is a chronic mental disorder that requires long-term treatment. Non-adherence to antipsychotics is common and associated with poor outcomes. Numerous studies have reported factors that influence non-adherence but without exploring the patient's views. **Aims and Objectives:** The present study was undertaken to analyze patient views on non-adherence to antipsychotic medication in schizophrenia. **Materials and Methods:** This cross-sectional study was conducted among patients diagnosed as schizophrenia by the psychiatrist, on antipsychotic medication and providing informed consent. Each patient's demographic, clinical, and treatment data along with the adherence levels using Medication Adherence Rating Scale (MARS) were recorded along with reasons for medication adherence behavior. The statements were reviewed and grouped into six categories: Insight, medication attitude and expectation, family support, efficacy of medication, side effects, and information. **Results:** A total of 72 patients were included in the study. The mean age was 38±12 years and non-adherence to antipsychotic medications was 46%. Reasons stated for non-adherence were lack of illness insight (37%) followed by negative medication attitude (29%) and lack of family support (9%). In adherent group, the presence of insight about illness (40%), followed by positive medication attitude (23%) and having family support (17%) was recorded. **Conclusion:** Non-adherence to antipsychotic medication was noted to be 46%. Illness insight, followed by medication attitude of the patients, plays an important role in the medication adherence behavior of the patients.

KEY WORDS: Schizophrenia; Patient's views; Antipsychotic drugs; Adherence; Non-adherence

INTRODUCTION

Schizophrenia is a disabling psychiatric illness with severe and persistent psychotic symptoms associated with variable cognitive impairment and psychosocial dysfunction.[1] The prevalence of schizophrenia in India is approximately 2.5/1000 with extreme disability if untreated. According to national mental health sciences report among those reporting disabilities due to mental illness, extreme disability was the highest among persons with schizophrenia and other psychotic disorders (20.5–28.2%).[2] In addition to pronounced effects on the well-being of patients and their families, schizophrenia also exacts an economic burden.

Antipsychotics are the mainstay in the treatment of psychotic symptoms.[1] Long-term maintenance therapy is recommended for all the patients. However, non-adherence in schizophrenia, though potentially preventable, is highly prevalent ranging from 41.2% to 49.5%.[3] In the Clinical Antipsychotic Trials of Intervention Effectiveness study, 74% of patients were found to be non-adherent to initial study medication before 18 months.[4] Non-adherence is known to be associated with rehospitalization, relapse, and poor functional outcomes.[5] Greater understanding of contributors to non-adherence is needed to frame preventive strategies.

Access this article online	
Website: www.njppp.com	Quick Response code
DOI: 10.5455/njppp.2019.9.0206002032019	

In psychiatry, both perceptual (patient's beliefs) and practical factors (capability and resources) have been shown to influence the adherence to treatment regimens. Numerous studies across the globe have identified many factors that influence non-adherence in schizophrenia. Systematic reviews have shown that poor insight, negative attitude or subjective response to medication, substance abuse, shorter illness duration, inadequate hospital discharge planning, and poor therapeutic alliance were associated with non-adherence.[6,3] Several newer long-term studies have proposed a different set of factors for non-adherence. A large, 3-year, prospective, observational study of schizophrenia in the United States[7] reported that non-adherence in 6 months before enrollment, recent illicit drug use, recent alcohol use, prior treatment with antidepressants, and medication-related cognitive impairment was the best predictors of non-adherence. Another 5-year follow-up study by de Haan *et al*.[8] found that medication non-adherence was related to the baseline variables of hostility, uncooperativeness, and involuntary admission. This demonstrates the inconsistencies in the factors reported to contribute toward non-adherence.

Although knowledge about the associated factors has improved over years, the prevalence of non-adherence has not reduced. Hence, the need for considering patients views on their medication-taking behavior was highlighted. Subjective experience of the patients about their adherence behavior would provide better understanding of the barriers to medication intake. Kikert *et al*. concluded that patients were able to identify the factors influencing treatment adherence and that their views might be different from the professionals and caregivers, which highlights the need for assessing patients' perspectives. Furthermore, the magnitude of non-adherence and the associated reasons may vary regionally, thus making it important to assess them in the local context. Hence, the present study was undertaken to analyze the patient's views on their adherence pattern.

MATERIALS AND METHODS

The study was conducted after obtaining approval from the Institutional Ethics Committee of Bangalore Medical College and Research Institute. Informed consent was obtained from each patient before the study. This was a part of a study titled "Assessment of factors influencing adherence to antipsychotic drugs among patients with schizophrenia at a tertiary care hospital."

Based on the prevalence of schizophrenia in India of 2.5/1000 and 50% of non-adherence in them with relative precision as 5% of prevalence, sample size estimated was 100.

This cross-sectional study was conducted on the patients attending the Department of Psychiatry, Victoria Hospital attached to Bangalore Medical College and Research Institute between November 2017 and August 2018. Participants included patients diagnosed with schizophrenia by a psychiatrist meeting ICD 10 criteria, willing to give informed consent, who were able to comprehend the questionnaire, with reliable informants. Patients who were prescribed antipsychotic medications in the past 6 months or more were included in the study, as the patients need time to be familiar with negative or positive effects of the medication. Patients with acute psychosis or, other coexisting psychiatric illnesses which would influence the outcome, who in the opinion of the investigator pose a risk of harm to self and others and those with no reliable informants, were excluded from the study as this would interfere with interviewing process.

Patients meeting the above inclusion and exclusion criteria were included in the study. Individual, face-to-face, and in-depth interviews were conducted with each study participant along with caregiver. Demographic data, clinical data, and treatment-related data were recorded in the case record form. Patient's medication adherence behavior was assessed using Medication Adherence Rating Scale (MARS). Each patient with the caregiver was enquired to state the reason for medication adherence behavior. Patients own statements were recorded. Later, the two investigators reviewed the statements and independently grouped the statements into various categories. Finally, all the statements were placed in six categories: Insight, medication attitude and expectation, family support, efficacy of medication, side effects, and information [Table 1].

Assessment Tools

MARS

It is a patient self-report tool to assess medication adherence developed and validated by Thompson *et al*.[9] It consists of 10 items with each item response consisting of "YES" or "NO." It is validated for assessing adherence in psychosis. It has factors representing medication-taking behavior, attitude toward medication, and negative side effects of psychotropic medication. A score of ≤5 is considered to be non-adherent.

Table 1: Characteristics of the patients providing reasons for the antipsychotic medication-taking behavior (*n*=72)

Variables	Value
Total number of participants (*n*)	72
Mean age (years)	38±12
Male (*n*)	46
Female (*n*)	26
Mean MARS score	5.99
Total number of adherent patients *n* (%)	39 (54)
Total number of non-adherent patients *n* (%)	33 (46)

MARS: Medication Adherence Rating Scale

Table 2: Patient's statements about medication-taking behavior of antipsychotic medication grouped into various categories (*n*=72)

Categories	Statements
Lack of insight	"I don't have any illness"
	"I don't need any medication as I don't have any illness"
Presence of insight	"I know that I have an illness and I need medication"
	"I know that I will not get better if I don't take medication"
	"I know that my family will suffer if I don't get treated"
Positive medication attitudes and expectations	"I have faith that the medication is effective"
	"I take medication to avoid going back into hospital"
Negative medication attitudes and expectations	"I feel suspicious about the medication"
	"I believe that the medication will harm me"
	"The voices telling me not to take the medication"
	"I am going to get married, so I am worried about people's attitude toward me"
	"I feel better when I stop taking it"
	"I had a bad experience the first time I was given medication"
Family support present	"My caregivers remind me to take medication"
	"My family gets my medications on time"
	"My family administers my medication"
	"I have pledged to my family I will take medicines on time"
No family support	"I stay alone and nobody brings me medicines"
Efficacy of medications	"The medication keeps me from feeling ill"
	"The medication is effective in reducing the hallucinations"
	"I am able to function better due to the medication"
Side effects	"Movement disorders are a problem to me"
	"Obesity/weight gain due to the medication"
	"Feeling tired due to the medication"
Information about medication given	"I was told that I need long-term medication to keep my illness under control"
Lack of information about medication	"I don't know how long to take medications"
	"I feel better now, so stop taking it"

Data analysis

Data were analyzed using Microsoft Excel sheet and VassarStats. Results were expressed as means, percentages, standard deviation, and odds ratio (OR). Chi-square test was applied to test the association between the qualitative variables.

RESULTS

A total of 72 patients satisfying inclusion criteria were included in the study and completed the questionnaire. Mean age of the participants was 38 ± 12 years with male-to-female ratio was 46:26. Mean MARS score was 5.99. 54% of the patients were found to be adherent and 46% as non-adherent [Table 2].

The reasons for non-adherent behavior [Table 3] in majority of the patients were lack of illness insight 37%, followed by negative medication attitude 29%, lack of family support 9%, side effects of medication 7%, and lack of information 6%.

Table 3: Percentage of adherent and non-adherent patients in various categories as per their statements regarding medication-taking behavior (*n*=72)

Categories	Adherent (*n*=33) (%)	Non-adherent (*n*=39) (%)
Lack of insight	7	37
Presence of insight	40	10
Positive medication attitude and expectation	23	1
Negative medication attitude and expectation	0	29
Family support present	17	1
Family support absent	1	9
Efficacy of medication	11	0
Side effects	0	7
Information about medication given	1	0
Lack of information about medication	0	6

The reasons for adherent behavior in majority of the patients were the presence of insight about illness 40%, followed

by positive medication attitude 23%, having family support 17%, and medication efficacy 11%.

Lack of illness was an independent predictor of non-adherence to antipsychotic medication (OR 20.43, confidence interval 6.19–68.19, $P < 0.0001$). There was also association between illness insight and negative medication attitude (Pearson's χ^2 value of 16.53 and $P < 0.0001$).

DISCUSSION

Jeffery k Aronson suggested that solution to non-adherence is simply tailoring the treatment to patient's lifestyle and not other way round.

The present study was an attempt to analyze the patient's views in their own cognizance on medication-taking behavior. Although many studies have evaluated the factors that influence non-adherence to antipsychotic medication, patient concerns about medications have not been explored. Adherence to medication is the most important factor in the effective management of schizophrenia. Hence, the present study was undertaken.

In the present study, we noted that adherence to medication could be attributed to the presence of insight about illness, followed by positive medication attitude and family support. Majority of the patients with non-adherence to medications had lack of insight about the illness, followed by negative medication attitude.

Non-adherence as measured by MARS scale was noted in 46% of the participants. Non-adherence to antipsychotic medications is estimated to be nearly 50% but varies worldwide.[3] A study from Jordan reported the prevalence of 64%[10] and another similar study in Mysuru, India, showed the prevalence of 43%.[11] This variation can be due to variation in sample size, different methods in the assessment of the adherence and several patients, disease, and treatment-related factors. Non-adherence to medications has negative consequences mainly, relapse, rehospitalization, delayed remission, and higher suicide rate. Non-adherence in schizophrenia has been significantly associated with premature mortality also.[12] Reducing non-adherence to antipsychotic medications not only benefits the patients but also reduces the resources used for them.

Previously, numerous studies have reported many factors that influence non-adherence, but these studies have not explored the decision-making process of the patients that influence their medication-taking behavior. Kikkert *et al*. reviewed patients', carers', and professionals' view on medication adherence. The study identified five themes that significantly influenced adherence were medication efficacy, external factors such as patient support and therapeutic alliance, insight, side effects, and attitudes toward medication.[13] Mert *et al*. evaluated the patients' perspective on non-adherence among various psychiatric illnesses and reported that non-adherence in schizophrenia was associated with "not accepting the disease," followed by "not willing to use the medication."[14]

In general, insight refers to knowing about "one's illness and of the social consequences of the disorder." Lack of insight may lead to poor adherence because persons with impaired insight often do not realize that they have a condition and that can be successfully treated. Therefore, they often discontinue treatment. In the present study, among 37% of the non-adherent patients were not aware of their illness or need for medication. Lack of insight and poor adherence are the common features of schizophrenia and have major impact on treatment, course, and outcome. Several studies have shown that better insight results in favorable clinical outcomes, mainly fewer hospitalizations, and better global functioning.[15] Acosta *et al*. in their study to evaluate non-compliance in schizophrenia using electronic monitoring reported that non-adherent patients demonstrated poorer insight into the areas of global insight, need and efficacy of treatment, and consequences of the disease.[16] Non-pharmacologic modalities such as compliance therapy, motivational interviewing, and cognitive behavioral therapy have been shown to improve insight, which, in turn, help the patient to explore their own goals and participate actively in the treatment. There was also association between illness insight and negative medication attitude, where it shows that patients' attitude is also influenced by the patients' awareness of illness. And can be modified by above mentioned modalities, there by improving adherence to a greater extent.

About 85% of the patients' non-adherent to medication expressed the lack of family support in taking medications. A prospective study by Ramírez García *et al*. found that instrumental family support where the family caregiver takes the task of assisting the patient in medication intake or supervises it, had higher adherence rates.[17] 7% of the patients in the present study with lack of insight were found to be adherent which was attributed to the support of the family members in taking medication. Falloon *et al*. concluded that family-based treatment program for schizophrenia had lesser exacerbations, more remission leading to lesser requirement for hospital care.[18] This highlights the need for family intervention program for creating an effective environment for the patients which would translate into better outcomes.

About 7% of the non-adherent patients stated that they stopped medication due to side effects. Antipsychotic medication can induce a wide variety of side effects and the association of side effects with non-adherence has been established by previous literature. Medication-related obesity and cognitive impairment were significant predictors of non-adherence. DiBonaventura studied the relationship between patient-reported antipsychotic side effects and self-reported

medication adherence in a community-dwelling sample of patients with schizophrenia. The study reported that extrapyramidal, cognitive, endocrine, and metabolic side effects were significantly associated with non-adherence. Prevention, identification, and effective management of medication-induced side effects are important to maximize adherence and reduce health resource use in schizophrenia.[19]

An expectation defined as "a thing that is expected to happen" and attitude as "what one thinks or feels." Expectation of the patients about their medication can influence the use of medicines. The disagreement between the health-care provider and patients' expectation has been shown to affect the implementation of medication regimen adversely. In the present study, 23% of the adherent patients had positive medication attitude and expectation. They believed that medication will help them and prevent them from going back to hospital. The past experience of rehospitalization due to discontinuation of the medication also made the patients to be adherent in the present study. About 27% of the non-adherent patients had negative medication attitude and expectations. They believed that they will be harmed by the drugs or had a social stigma regarding medications. Expectations have been reported to be affected by patient's beliefs, past experiences with medications, relationships with their health-care providers, other people's beliefs, and the cost of medication. Any negative experience (side effect) with the drug may result in discontinuation of the medication. Better communication between patients and health-care providers could help patients to monitor their progression, be able to report any adverse effects more effectively and feel more fully informed about the therapy that they are receiving.[20] Awareness of patient's expectations can also help physicians to identify and discuss situations where patient's expectations are different from their own. This could help reduce gaps in information about drugs and make better plans for monitoring. It is also possible that, as physicians and patients discuss their expectations, physicians' prescribing would become more aligned with particular patient's needs.

In the present study, 11% of the adherent patients reported that medications were effective in reducing the symptoms, mainly hallucinations and they were able to function better. These patients affirmed to the efficacy of the drugs. Kikkert *et al*. reported that both patients' and carers' felt that efficacy of the medications is an important contributor for the adherence behavior.[11] In the same study, professionals felt that efficacy was less important contributor. Hence, from the patients' perspective, professionals need to discuss the efficacy of the drugs in detail with the patients along with adverse effects.

About 6% of the non-adherent patients reported that lack of information about medication affected their adherence behavior. Schizophrenia is a chronic illness that requires long-term therapy. Accurate information about the disease and medication plays a key role in medication-taking behavior of the patients. This highlights the need for explaining the patients about the nature of illness and treatment-related facts.

Strengths and Limitations

The strengths of the study are that patient's views are analyzed and patients representing "real-world" population are included in the study. The limitations include small sample size and observational nature of the study. The questionnaire used for interviewing the patients was subjective.

CONCLUSION

Majority of the adherent patients had insight about the disease and need for medication, and they had positive medication attitude and family support. However, among non-adherent patients, most of the patients had no insight about the illness, negative medication attitude, and no family support and were perturbed by side effects.

Several adherence interventions are being tried in psychiatry recently; cognitive behavioral therapy-based intervention therapy, electronic monitoring and feedback, telemonitoring, SMS reminders, and personalizing the intervention based on individuals' attitude and cultural relevance. The present study is expected to provide inputs for the development of non-adherence preventive framework.

ACKNOWLEDGMENT

The authors would like to thank all the faculty members of the Department of Pharmacology and Psychiatry, Bangalore Medical College and Research Institute, Bengaluru, for their support in conducting the study.

REFERENCES

1. Tamminga MC. Introduction to schizophrenia. In: Sadock BJ, Sadock VA, Ruiz P, editors. Kaplan and Sadocks' Comprehensive Text Book of Psychiatry. 10th ed. Philadelphia, PA: Wolter and Kluwer; 2017. p. 3613-4.
2. Ganguli HC. Epidemiological findings on prevalence of mental disorders in india. Indian J Psychiatry 2000;42:14-20.
3. Lacro JP, Dunn LB, Dolder CR, Leckband SG, Jeste DV. Prevalence of and risk factors for medication nonadherence in patients with schizophrenia: A comprehensive review of recent literature. J Clin Psychiatry 2002;63:892-909.
4. Lieberman JA, Stroup TS, McEvoy JP, Swartz MS, Rosenheck RA, Perkins DO, *et al.* Effectiveness of antipsychotic drugs in patients with chronic schizophrenia. N Engl J Med 2005;353:1209-23.
5. Novick D, Haro JM, Suarez D, Perez V, Dittmann RW, Haddad PM, *et al.* Predictors and clinical consequences of non-adherence with antipsychotic medication in the outpatient treatment of schizophrenia. Psychiatry Res 2010;176:109-13.

6. Olfson M, Mechanic D, Hansell S, Boyer CA, Walkup J, Weiden PJ, *et al.* Predicting medication noncompliance after hospital discharge among patients with schizophrenia. Psychiatr Serv 2000;51:216-22.
7. Ascher-Svanum H, Zhu B, Ernst FR, Faries DE, Jacobson JG, Doebbeling CC, *et al.* The 3-year clinical and functional course of schizophrenia among individuals with and without diabetes at study entry. Prim Care Companion J Clin Psychiatry 2007; 9:122-8.
8. de Haan L, van Amelsvoort T, Dingemans P, Linszen D. Risk factors for medication non-adherence in patients with first episode schizophrenia and related disorders; A prospective five year follow-up. Pharmacopsychiatry 2007;40:264-8.
9. Thompson K, Kulkarni J, Sergejew AA. Reliability and validity of a new medication adherence rating scale (MARS) for the psychoses. Schizophr Res 2000;42:241-7.
10. Mukattash TL, Alzoubi KH, Abu El-Rub E, Jarab AS, Al-Azzam SI, Khdour M, *et al.* Prevalence of non-adherence among psychiatric patients in Jordan, a cross sectional study. Int J Pharm Pract 2016;24:217-21.
11. Lucca JM, Ramesh M, Parthasarathi G, Ram D. Incidence and factors associated with medication nonadherence in patients with mental illness: A cross-sectional study. J Postgrad Med 2015;61:251-6.
12. Cullen BA, McGinty EE, Zhang Y, Dosreis SC, Steinwachs DM, Guallar E, *et al.* Guideline-concordant antipsychotic use and mortality in schizophrenia. Schizophr Bull 2013;39:1159-68.
13. Kikkert MJ, Schene AH, Koeter MW, Robson D, Born A, Helm H, *et al.* Medication adherence in schizophrenia: Exploring patients', carers' and professionals' views. Schizophr Bull 2006;32:786-94.
14. Mert DG, Turgut NH, Kelleci M, Semiz M. Perspectives on reasons of medication nonadherence in psychiatric patients. Patient Prefer Adherence 2015;9:87-93.
15. Schwartz RC. The relationship between insight, illness and treatment outcome in schizophrenia. Psychiatr Q 1998;69:1-22.
16. Acosta FJ, Bosch E, Sarmiento G, Juanes N, Caballero-Hidalgo A, Mayans T, *et al.* Evaluation of noncompliance in schizophrenia patients using electronic monitoring (MEMS) and its relationship to sociodemographic, clinical and psychopathological variables. Schizophr Res 2009;107:213-7.
17. Ramírez García JI, Chang CL, Young JS, López SR, Jenkins JH. Family support predicts psychiatric medication usage among mexican american individuals with schizophrenia. Soc Psychiatry Psychiatr Epidemiol 2006;41:624-31.
18. Falloon IR, Boyd JL, McGill CW, Razani J, Moss HB, Gilderman AM, *et al.* Family management in the prevention of exacerbations of schizophrenia: A controlled study. N Engl J Med 1982;306:1437-40.
19. Dibonaventura M, Gabriel S, Dupclay L, Gupta S, Kim E. A patient perspective of the impact of medication side effects on adherence: Results of a cross-sectional nationwide survey of patients with schizophrenia. BMC Psychiatry 2012;12:20.
20. Dolovich L, Nair K, Sellors C, Lohfeld L, Lee A, Levine M, *et al.* Do patients' expectations influence their use of medications? Qualitative study. Can Fam Physician 2008;54:384-93.

How to cite this article: Saba NUZ, Muraraiah S, Chandrashekar H. Medication adherence in schizophrenia: Understanding patient's views. Natl J Physiol Pharm Pharmacol 2019;9(5):373-378.

Source of Support: Nil, **Conflict of Interest:** None declared.