

# Revisiting the Intractable Barriers Affecting Medication Adherence Among Outpatients with Schizophrenia

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## Revisiting the Intractable Barriers Affecting Medication Adherence Among Outpatients with Schizophrenia

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### Abstract

Medication adherence is one of the foremost problems affecting antipsychotic efficacy in schizophrenia patients. Medication nonadherence among schizophrenia patients has been often estimated > 50%, leading to higher rates of relapse and hospitalization as well as to decreasing cognitive and functional prognosis. The purpose of the study is to identify the strategy for improving medication adherence in schizophrenia and evaluate adherence using Medication Adherence Rating Scale (MARS) and determinant factors affecting adherence. Prospective study with cross sectional design was conducted from October to December 2019. Especially data from schizophrenia outpatients in one of national mental hospital in Indonesia. Schizophrenia outpatients were majority male (60%), the age range from 31-49 years were 70%, most of patients are single (63,33%), 70% have secondary education, 70% of them are from Surabaya area, and half of them their duration of the disease from 1 to 5 years. This study showed that the pattern of prescription of antipsychotics are risperidone and clozapine were the most antipsychotics prescribed. 40% of patients have good adherence, 40% of patients have partial adherence, and only 20% of patients' poor adherence. Most of schizophrenia outpatients have experience in forget to take his/her medicine and careless at times about taking his/her medicine and less knowledge about schizophrenia. In other hand, 100% patients have agreed by staying on medication, it can prevent getting sick. The mental hospital should utilize educational program to improve patient's awareness about their disorder and their medications to improve their adherence.

**Key words :** Schizophrenia, Antipsychotics, SGAs, Medication Adherence, MARS, Mental Health

### 1. Introduction

It is not easy to maintain medication adherence on patient with schizophrenia. Although the advances in psychopharmacology have greatly improved the range of options for treating schizophrenia, the outcome may not

be optimal to prevent patient from relapse and hospitalization (1). Low adherence has been evident in many patients with schizophrenia contributing to a number of severities including higher risk of suicide and financial burden which affects not only patients but also their families and care givers (2). Several publications have reported significant portion of non-adherence in the case of schizophrenia ranging from 40% to 70% (3). In fact, 75% of patient with schizophrenia stop taking their medication within 18 months (4).

Poor adherence in schizophrenia can be associated with a number of factors such as social isolation, stigmatization and comorbidities, substance misuse of psychotropic medication (5). As adherence is a complex phenomenon, these factors may be exacerbated by a wide variety of other causes such as lack of illness awareness, the adverse effect of the medication, the long-term treatment and the fragmented health care services for patient with mental health issues. Such condition may be increased yet undetected in the outpatient setting as patient will need to undertake and be responsible for the medication at their own risk (5).

The risk of non-adherence in the outpatient setting cannot be neglected. A systematic review of longitudinal studies reported that there were 27% of individuals with schizophrenia who had poor outcome after the first episode of psychosis (6). Another study indicated that 82% of patients would likely to suffer first relapse and 78% would continue to suffer the second relapse after the first episode of psychosis (7).

The causes of non-adherence include the patients factors as fear of adverse effects, physical and psychiatric conditions, forgetfulness, external distractions, misunderstanding instructions, lack of insight and lack of information about disorders. Treatment factors as numerous medications, enduring symptoms, partial or no efficacy. Social economic factors as lack of income, transportation, living alone, and stigma of mental illness (8).

Schizophrenia is one of nine chronic disease covered by national health covered in Indonesia (9). In Indonesia, the number of relapse on schizophrenia patients was reported. The number of relapsed had significant correlation with medication non-adherence. The common problems of medication non-adherence among schizophrenia patients in Indonesia were social economic, attitudes to medication, knowledge, and family support (10).

Medication non-adherence will escalate the risk of recurrences, hospital admission rate and medication expense (11). The cost of re-hospitalizations and non adherence per year were 100 billion USD and 290 USD (12). In Indonesia, cost of illness schizophrenia was estimated 32 million IDR/year/patient (13). The objective of this study is to identify the strategy for improving medication adherence in schizophrenia and evaluate adherence using Medication Adherence Rating Scale (MARS) and determinant factors affecting adherence.

## 2. Materials and Methods

**Design :** Prospective study with cross sectional design was conducted from October to December 2019. This study has been approved by the Ethic Committee of the Menur Mental Hospital with number of ethical approval 070/7556/305/2019. Especially data from schizophrenia outpatients in one of national mental hospital in Indonesia. Non probability sampling (purposive sampling) all schizophrenia patients who registered as an outpatient national mental hospital in the chosen sitting and fulfill the inclusion criteria was selected.

**Subjects :** The inclusion criteria are patient with schizophrenia, being adult aged 18 or older, who agree to participate in the study, and patient who have insight. The exclusion criteria are patient who have other mental disorder and patients diagnosed with brain dysfunction or cognitive impairment. The minimum sample size for descriptive quantitative research not less than 30. The participants were 30 patients. Informed consent was obtained from all participants after explaining the study and its objectives. Participants were included only after they signed the informed consent. All researchers ensured participant data confidentiality and compliance with the Declaration of Helsinki. This study was conducted in one of national mental hospital in Indonesia. Participants were interviewed regarding their history of mental illness, sociodemographic characteristic, and pharmacological treatment.

**Instrument :** The Medication Adherence Rating Scale (MARS) tool was used for measuring level of adherence. It was formerly evolved and validated by Thompson et al., to evaluate treatment compliance specifically in people under antipsychotic treatment. It was designed to assess both the patients attitude towards medication and also actual medication taking behavior. the reliability analysis of the MARS using cronbach's alpha was 0.75 (14). The validity and reliability of MARS with large sample (N=319) by Fond et al., a coefficient were close to 0.6 (15). It was translate into Indonesia and validated by Yuliana et al., with reliability result 1.107 (16).

MARS consists of three parts questions/statements; question 1-4 represent treatment adherence behavior, question 5-8 represent attitude toward taking medicines and question 9-10 represent adverse effects and attitudes to antipsychotic treatment. Every question or statement should be answered with a 'YES' or 'NO' answer. A negative response indicate with non-compliance is code as zero. Whereas a positive response indicate with compliance is coded as one.

For questions 1-6 and 9-10 an 'disagree' answer is indicate of positive response and hence should be coded as one. In opposed for questions 7-8 a 'agree' answer pointing to positive response and hence should be coded as one. The whole of adherence scoring range between nil (non-compliance) to ten (compliance), with a greater score pointing good attitudes and behavior towards positive compliance. Patient with total score < 5 (non adherence), 5-7 (partial adherence), and ? 8 (good adherence).

**Processing and analyzing data :** Statistical Package for social Science (SPSS) version 24 was used. The following statistical measured were used as descriptive measures as numbers, percentage, mean and standard deviation. Analytical statistics as T-test independent sample and Analysis of Variance one away.

## 3. Results and Discussion

Characteristic of schizophrenia outpatients and medication

Table 1 reveals that male were majority (60%), the age range from 31-49 years were 70%, most of patients are single (63,33%), 70% have secondary education, 70% of them are from Surabaya area, and half of schizophrenia patients have mental disorder with a range duration of 1 to 5 years. Table 2 shows that the pattern of prescription of antipsychotics are risperidone and clozapine were the most antipsychotics prescribed for schizophrenia

**Table 1.** Characteristic of schizophrenia outpatients

Characteristics	N	%
<b>Gender</b>		
Male	18	60
Female	12	40
<b>Age (year)</b>		
18-30	4	13.3
31-49	21	70
50-65	4	13.33
>65	1	3.33
<b>Marital status</b>		
Single	19	63.33
Married	10	33.33
Divorced	1	3.33
<b>Educational level</b>		
Elementary school	4	13.33
Junior high school	9	30
Senior high school	12	40
College or higher	5	16.67
<b>Occupation</b>		
Full time	11	36.66
Part time	5	16.67
Not worker	14	46.67
<b>Duration of treatment (year)</b>		
1-5	15	50
6-10	10	33.33
11-15	5	16.67
<b>Number of antipsychotic</b>		
Monotherapy	4	13.33
2 antipsychotics	23	76.67
≥ 3 antipsychotics	3	10
<b>MARS total score</b>		
Minimum total score	4	
Maximum total score	10	
Mean total score	7.20	

**Table 2.** Regimen of oral antipsychotics

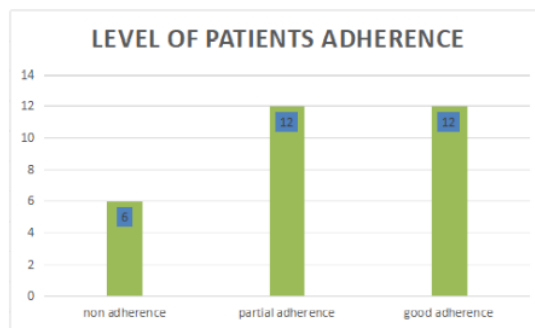
Regimen therapy	N	%
Risperidone	3	10
Risperidone + Clozapine	12	40
Risperidone + Clozapine + Trifluoperazine	3	10
Clozapine + Trifluoperazine	8	26.67
Haloperidol	1	3.33
Haloperidol + Clozapine	2	6.67
Aripiprazole + Clozapine	1	3.33

outpatients. Currently, atypical antipsychotics became drug of choice in schizophrenia treatment considering more effective in relapse prevention, reduced risks of

extrapyramidal syndrome and increased quality of life (17).

**Level of adherence and attitude towards medication**

The effectiveness of the medication is impacted and the chance of recurrence will be elevated when people with schizophrenia discontinue taking medication. The results of this study, only six patients (20%) have poor adherence (see figure 1). This results was in the line with Kamali et al., who reported that schizophrenic subjects had poor adherence lower than schizophrenic subjects had good adherence (18). Contrasting to other studies, who informed that lack of compliance was found in about half of people suffering from schizophrenia (19,20,21).



**Figure 1.** Number of level of patients adherence

In other hand, table 3 indicated that most of patients with schizophrenia undergo in forget to take his/her medicine and careless at times about taking his/her medicine, adverse effects and deficiency of insight and shortage of information about their disorder. From the sighting, this is might because the healthcare team did not provide the client and caregiver the comprehensive information according to their treatment and illness. Including intervention, dosage regiment, therapeutic effect, and adverse effect. The results of current study indicated that half participants with schizophrenia disorder did not clearly understand their illness and medication.

Many studies has reported that medication adherence is related to knowledge and experience of, and insight into the illness, in addition to patient's attitudes toward the use of medication for the treatment of psychiatric disorders (22,23,24,25). One of study reported that when patients were not fully informed about their illness and treatments, there were likely to discontinue medication therapy of their own volition without discussing the matter with healthcare professional (23).

**Table 3.** Frequency of Attitude towards medications

Medication adherence questions/statement	YES		NO	
	N	%	N	%
1. Do you ever forget to take your medication?	15	50	15	50
2. Are you careless at times about taking your medicine?	13	43.3	17	56.7
3. When you feel better, do you sometimes stop taking your medicine?	6	20	24	80
4. Sometimes, if you feel worse when you take the medicine, do you stop taking it?	4	13.3	26	86.7
5. I take my medicine only when I am sick	2	6.7	28	93.3
6. It is unnatural for my mind and body to be controlled by medication	3	10	27	90
7. My thoughts are clearer on medication	16	53.3	14	46.7
8. By staying on medication, I can prevent getting sick	30	100	0	0
9. I feel weird, like a 'zombie', on medication	9	30	21	70
10. Medication makes me feel tired and sluggish	19	63.3	11	36.7

**Factor affecting medication non-adherence**

The triggers of non adherence include the personal factors, medication factors, and socio-economic environment factors. The results of this study there is no significant different adherence score between gender group and educational level group (table 4). This finding inline with Naafi et al., who reported there is no meaningful difference between patients characteristic and the patients medication adherence level (26). Conforming current study pointed out that there is no meaningful different between treatment factors such as duration of treatment and number of antipsychotics with treatment compliance score (table 5).

**Table 4.** Independent sample T-test gender different

Gender	N	adherence score (mean)	SD	Sig.(2 tailed)
Male	18	7.33	1.847	.564
Female	12	7.00	1.279	
Total	30	7.20	1.627	

10 This study contrasting to Dibonaventura et al., Dassa et al., and Yang et al., who reported that the quantity of medications may affects patient's toward compliance (16,17,18). The results of this current study shows more than 50% of participants has experiences with antipsychotic side effects. Lack information or education about heir medication and side effect might be occur

**Table 5.** Analysis of Variance One Away

Studied variable	Adherence			
	N	Adherence score (mean)	SD	Sig
<b>Education level</b>				
Elementary school	4	7.50	2.380	.942
Junior high school	9	7.00	1.732	
Senior high school	12	7.33	1.303	
College or higher	5	7.00	2.000	
Total	30	7.20	1.627	
<b>Treatment duration</b>				
1-5 year	13	6.92	1.847	.307
6-10 year	12	7.75	1.357	
11-15 year	5	6.60	1.517	
Total	30	7.20	1.627	
<b>Number of antipsychotic</b>				
1 antipsychotic	4	7.75	1.500	.307
2 antipsychotics	23	6.96	1.692	
≥ 3 antipsychotics	3	8.33	.577	
Total	30	7.20	1.627	

during treatment has negative impact on their treatment compliance. One of study reported that pharmacist counseling there was meaningful difference adherence level between pre and post pharmacist counseling intervention (27). Therefore, the health care team should give the patient and/or the caregiver psycho-educational program for compliance of treatment improvement (28,29,30).

There are several limitations in this study. Due to limited sample size and lack of clinical data as adherence parameter. Prospectively study with various number sample size and objective parameter of adherence might be considered. Despite the several limitations, our study provides preliminary finding to explore barriers affecting medication adherence in mental health disorder treatment.

**4. Conclusion**

Adherence to medication is a critical issue for patients with mental disorder. It cannot be overemphasized that patients should have insights into their own mental disorder and realize the necessity of taking medications to improve their chances of a successful recovery. The

healthcare provider should empower counseling program to elevate patient's cognition about their illness and their treatments affecting their compliance. Future research should focus on pharmaceutical care intervention such therapeutic monitoring and education of schizophrenia disorder and medication to improve patients knowledge of disorder and medication and attitudes toward medications.

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#### **Conflict of interest**

The authors declare no financial or commercial conflict of interest.

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