

The Relationship Between Medication Adherence, Antipsychotic Side Effects, and Quality of Life in Schizophrenia Patients: An Evaluation Using Mars10, Gass, and SQLS

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ABSTRACT

Schizophrenia is a chronic mental disorder requiring long-term antipsychotic treatment, where medication adherence and side effects significantly influence patient outcomes. However, the interplay between these factors and quality of life (QoL) remains understudied, especially in specific populations like Indonesia. This study aimed to analyze the relationship between medication adherence, antipsychotic side effects, and quality of life in schizophrenic patients. A total of 263 respondents participated in this study using three validated instruments: the Medication Adherence Rating Scale (MARS-10), the Glasgow Antipsychotic Side-effect Scale (GASS), and the Schizophrenia Quality of Life Scale (SQLS). The results of the analysis showed a very significant positive correlation between medication adherence and patient quality of life ($r = 0.808$; $p = 0.000$). In contrast, no significant association was found between antipsychotic side effects and adherence ($r = -0.003$; $p = 0.956$) or quality of life ($r = -0.028$; $p = 0.649$). The three instruments used showed high reliability, with Cronbach's alpha values of 0.941 (MARS-10), 0.970 (GASS), and 0.981 (SQLS), respectively. These findings confirm the importance of interventions aimed at improving medication adherence as a key strategy in enhancing the quality of life of schizophrenic patients. Further research recommends future patient-centered approaches, ongoing education, strong family involvement and therapeutic relationships, as well as the need for social support from other psychosocial factors.

KEYWORDS Schizophrenia; Medication Adherence; Antipsychotic Side Effects; Quality Of Life; MARS10; GASS; SQLS.



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INTRODUCTION

Mental health disorders are a condition that affects a person's thoughts, feelings or mood (Dheanda et al., 2020). Severe mental disorders are known as psychosis. One example of psychosis is schizophrenia. Schizophrenia is a complex and serious mental disorder that affects how a person thinks, feels and behaves. According to data from the World Health Organization (WHO) in 2021, the prevalence of schizophrenia ranges from 0.3% to 0.7% (about 24 million people) worldwide. Prevalence according to (Risksedas, 2019) for Maluku Province amounting to 3.90%, which ranked first with the number of schizophrenia patients of 16.70% was Southeast Maluku while Ambon City was ranked fifth with 4% (Kemenkes RI, 2022).

Schizophrenia is a chronic mental disorder that requires long-term treatment with antipsychotics. Antipsychotic treatment is one of the main therapies for managing psychotic

disorders, widely used to manage positive symptoms such as hallucinations and delusions as well as negative symptoms such as apathy and social disorders (Kim et al., 2024). Adherence to medication is the key to the success of therapy in the treatment of schizophrenia, to improve the symptoms of health problems, reduce recurrence to achieve long-term treatment goals. Treatment of schizophrenia must be carried out continuously so that it can prevent patients from recurrence of the disease and can restore function to be productive so as to improve the patient's quality of life (Fillah, M, Ichsan & Kembaren, 2022)

Antipsychotic drugs are the main treatment for schizophrenia, but they have side effects that appear during the use of antipsychotics, such as weight gain, sedation, extrapyramidal symptoms to metabolic syndrome which are one of the main factors that contribute to non-adherence to medication (Górska et al., 2019; Grinchii & Dremencov, 2020; Hori et al., 2024; Macfarlane & Cunningham, 2021; Rybakowski, 2023). Poor experience of these side effects not only decreases the patient's motivation to continue treatment but also has an impact on the physical and psychosocial well-being of schizophrenic patients which ultimately affects the normal quality of life.

A person's quality of life is related to the daily life situation. The quality of life of schizophrenia patients is also one of the important indicators in evaluating the success of treatment. In addition to being influenced by control of clinical symptoms, quality of life is closely related to adherence to long-term medication and side effects experienced so that it can optimize antipsychotic therapeutic interventions. According to research from (Fillah, M, Ichsan & Kembaren, 2022) Good qualities are characterized by positive self-perception, a sense of belonging, participation in fun activities as well as having a positive outlook on the future.

Therefore, this study aims to evaluate the relationship between medication adherence, antipsychotic side effects and quality of life in schizophrenia patients simultaneously at the Maluku Provincial Hospital. This study uses several instruments that have been developed and widely validated, including MARS-10 (Medication Adherence Rating Scale) to assess the level of medication adherence (Thompson et al., 2000), GASS (Etrapyramidal Symptoms Rating Scale) to assess antipsychotic side effects (Waddell & Taylor, 2008) and SQLS (Schizophrenia Quality of Life Scale) to evaluate the quality of life of schizophrenic patients (Wilkinson et al., 2000).

The findings of this study are expected to contribute significantly to the field of mental health by highlighting the pivotal role of medication adherence in improving QoL, independent of side effects. This underscores the need for targeted interventions, such as patient education, family support, and ongoing monitoring, to enhance adherence and overall treatment outcomes. By focusing on the unique challenges faced by schizophrenia patients in Maluku, the study also provides a foundation for future research and policy development aimed at optimizing mental healthcare delivery in similar settings.

Ultimately, this research advances the understanding of schizophrenia management by emphasizing the importance of a holistic, patient-centered approach that prioritizes adherence as a key driver of quality of life. The results will be valuable for healthcare providers, policymakers, and researchers working to improve mental health services for schizophrenia patients in Indonesia and beyond.

RESEARCH METHOD

This research used an observational design with a cross-sectional research method conducted at the Regional Special Hospital (RSKD) of Maluku Province from November 2024 to January 2025. The study was carried out after being declared to have passed the ethics review by the Ethics Commission of the University of KEPK on August 17, 1945, Jakarta, with Number: 128/KEPK-UTA45JKT/EC/EXP/11/2024.

The sampling technique was purposive sampling. Inclusion criteria included patients who had been diagnosed with schizophrenia, were undergoing outpatient treatment, aged 18–65 years, and patients or their companions/families who were willing to participate as respondents in this study.

The collected data were then analyzed using descriptive statistics to describe the sociodemographic characteristics and scale results of the three instruments: MARS-10, GASS, and SQLS. Pearson correlation and linear regression were used to test the relationships between adherence scores, side effect scores, and quality of life scores of schizophrenic patients.

RESULT AND DISCUSSION

Socio-Demographic and Clinical Characteristics of Patients

This study has been conducted on 263 schizophrenic patients at the Maluku Provincial Hospital who have met the inclusion criteria. Descriptions of patient characteristics include socio-demographic characteristics and clinical characteristics.

Table 1. Distribution of frequency and presentation of schizophrenia in RSKD Maluku Province based on socio-demographic characteristics

Characteristic Socio-Demographic	Category	N	%
Gender	Man	168	63.9
	Woman	95	36.1
Age	18-15 Years	30	11.4
	25-34 Years	83	31.6
	35-44 Years	79	30.0
	45-54 Years	43	16.3
	55-65 Years	28	10.6
Education	No School	70	26.6
	Elementary/Equivalent	23	8.7
	Junior High School/Equivalent	25	9.5
	High School/Vocational	114	43.3
	School/Equivalent	31	11.8
Marital Status	Higher Education (D3/S1/S2)		
	Unmarried	184	70.0
	Married	74	28.1
	Divorce Life	4	1.5
Work	Divorce Dead	1	4.0
	Student/Student	11	4.2
	Private Workers	8	3.0
	ASN/SOEs	13	4.9
	Entrepreneurial	30	11.4
	Housewives	30	11.4
Sum	Not Working	171	65.0
		263	100.0

Source: Primary Data

Table 1 shows that the results of this study show that the majority of schizophrenia patients are men as many as 168 people (63.9%), for the age of respondents is more at the productive age, especially in the range of 25-34 years as many as 83 people (31.6%). This is in accordance with research that has been conducted by (Nur Oktavia Hidayati¹, Fitri Aprianti², 2023) Yang has reported his research that more male patients suffer from schizophrenia than female patients and that age generally occurs in late adolescence to early adulthood.

The respondents' education and employment levels also show important characteristics that can affect medication adherence. Most of the patients had a high school/vocational/equivalent secondary education background as many as 114 people (43.3%) with unmarried status as many as 184 people (70.0%) and unemployed as many as 171 people (65.0%). Research with the majority of high school/vocational/equivalent, this is in line with the research that has been carried out (Wardani & Dewi, 2018) that the higher a person's education, the more insight and quality of life that are obtained so that education can reduce the risk of increased stress related to mental disorders or can increase recovery. In research (Nur Oktavia Hidayati¹, Fitri Aprianti², 2023) The majority of unmarried couples have a higher risk of schizophrenia, this is because marriage is a manifestation of the ability to foster interpersonal relationships and as a picture of social support as a forum for affection, attention and peace to achieve a fulfilling life. The highest level of respondents' employment was those who were not working, unemployment was a factor associated with a poorer quality of life in schizophrenic patients due to a sense of powerlessness for the future. According to research (Mardiah et al., 2022) The psychosocial approach is one of the most effective approaches for people with schizophrenia in improving the quality of life.

Table 2. Distribution of frequency and presentation of schizophrenia in Maluku Province
Hospital based on clinical characteristics

Clinical Characteristics		N	%
Age of Onset of Diagnosis	< 18 years old	45	17.1
	18-35 Years	130	49.4
	36-45 Years	53	20.2
	46-65 Years	35	13.3
Long Suffering from Schizophrenia	1-5 Years	97	36,9
	6-10 Years	97	36,9
	>10 Years	69	26,2
Sum		263	100.0

Source: Primary Data

Based on data obtained from clinical characteristics, the majority of patients were first diagnosed with schizophrenia at the age of 18-35 years (49.0%), which is a young adult age and a transition period from education to the world of work, so there is a need for special attention to mental disorders in adolescents. Most of the patients had lived with schizophrenia for a long time (more than 5 years) as many as 99 people (37.6%). Many patients have chronic disease duration and require a long-term management approach, both pharmacological and non-pharmacological therapies.

Table 3. Results of Reliability Test of Three Questionnaire Instruments

Questionnaire Instruments	Cronbach's Alfa	n Questions
MARS-10 (Compliance)	0.941	10
GASS (Antipsychotic Side Effects)	0.970	21
SQLS (Quality of Life)	0.981	21

Source: Primary Data

Based on table 3, this study uses three questionnaire instruments that have been validated and their reliability is based on references from previous research so that it is possible to obtain consistent and accurate data using Cronbach's Alpha value. The MARS-10 instrument has a Cronbach's Alpha value of 0.941, indicating that the instrument has very high reliability and consistency in measuring the adherence of schizophrenic patients to antipsychotic treatment. The GASS instrument has a Cronbach's Alpha value of 0.970, and also shows very high reliability in measuring the side effects of antipsychotic use. The SQLS instrument has a Cronbach's Alpha value of 0.981, and also shows very high reliability compared to MARS and SQLS in evaluating the quality of life of schizophrenic patients. The three instruments used in this study have been proven to be very reliable with all Cronbach's Alpha values being above 0.9. This suggests that the data obtained can be used as the main measurement tool in research.

Table 4. Normality Test Results (Kolmogorov-Smirnov Z)

Variable	Kolmogorov-Smirnov Z	Sig. (2-tailed)	Distribution
MARCH10	4,295	0.000	Abnormal
GASS	3,954	0.000	Abnormal
SQLS	5,067	0.000	Abnormal

Source: Primary Data

The test results in table 4 show the test results The Kolmogorov-Smirnov Z normality that all variables have a data distribution that deviates from the normal distribution or has a significance value < 0.05 . Therefore, the correlation analysis in this study uses the Spearman non-parametric correlation test.

Table 5. Spearman Correlation Test Results

Correlation	Coefficient (p)	Sig. (2-tailed)	Information
MARCH10 – GASS	- 0,003	0.956	Insignificant
MARS10 – SQLS	0,808	0.000	Very Significant
GASS - SQLS	- 0,028	0.649	Insignificant

Source: Primary Data

The results of the Spearman correlation test in Table 5 showed that the scores of MARS10, GASS and SQLS in 263 schizophrenic patients showed that there was a meaningful relationship between medication adherence to medication and quality of life. Correlation analysis showed a coefficient value of 0.808 with a significance value of $p = 0.000$, which indicated a very strong and statistically significant relationship between the level of adherence to treatment and the improvement of the quality of life of schizophrenic patients.

Meanwhile, the correlation results between the MARS10 and GASS scores showed that correlation coefficient of -0.003 with a value $p = 0.956$, which means no significant relationship between perception of drug side effects and patient adherence. These findings suggest that the

side effects experienced by patients do not entirely decrease medication adherence, it could be that patients remain compliant with medication because other factors such as family support, health care provider supervision, or understanding of the importance of therapy may play a greater role in determining medication adherence (Mashudi, 2021).

The correlation between the GASS and SQLS scores showed a coefficient value of -0.028 with a significance of $p = 0.649$, which also indicated that there was no significant relationship between the perceived side effects that did not directly affect the patient's perception of the patient's quality of life. This indicates that the patient may receive certain side effects, especially if the main symptoms of schizophrenia are successfully controlled through treatment.

Overall, these results suggest that medication adherence is a strong predictor of the quality of life of schizophrenia patients, while medication side effects do not significantly affect both adherence and quality of life. These findings emphasize the importance of strategies to improve adherence to treatment, such as patient education, medication supervision, and social support, as part of a holistic approach to managing schizophrenia.

Therefore, efforts to improve the quality of treatment for schizophrenia patients depend not only on increased adherence, but also on active monitoring and management of side effects, for example through the selection of antipsychotic types with a milder profile of side effects and the role of medical personnel in accompanying patient treatment on an ongoing basis (Restiana et al., 2023)

CONCLUSION

A study involving 263 schizophrenic patients found a strong, positive correlation between medication adherence (measured by MARS-10) and quality of life (measured by SQLS), with a correlation coefficient of 0.808 and a highly significant p -value of 0.000, indicating that better adherence to antipsychotic treatment is associated with improved psychosocial well-being and daily functioning. In contrast, antipsychotic side effects (measured by GASS) showed no significant relationship with either adherence or quality of life, suggesting that side effects do not directly influence these outcomes. The instruments used demonstrated high reliability, supporting their validity in assessing adherence, side effects, and quality of life. These findings underscore the importance of intervention strategies focused on enhancing medication adherence—such as continuous patient education, family involvement, medication monitoring, and strengthening therapeutic relationships—to improve quality of life for patients with schizophrenia. For future research, it is recommended to investigate additional psychosocial factors like stigma, disease insight, and social support to better understand their influence on quality of life and long-term treatment success.

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