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Medication Adherence and Quality of Life in Patients with Depression at Psychiatric Hospital in Surakarta, Indonesia

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ABSTRACT

Non-adherence to depression treatment may result in elevated risk of disease development, morbidity, and premature mortality, along with a deterioration in quality of life. This study is to investigate the correlation between medication adherence and quality of life among patients with depression receiving treatment in a psychiatric hospital in Surakarta, Indonesia. This cross-sectional quantitative study on depression was undertaken at the Psychiatric Hospital in Surakarta from March to June 2025. The instruments employed were the MARS-10 and WHOQoL-BREF questionnaires, both of which were translated into Indonesian. Spearman's rho was used to assess the correlation between medication adherence and quality-of-life ratings. SPSS 29 was used to analyse, with a p-value < 0.05 deemed significant. Of the 110 patients who participated, the majority were aged 18-35 years (51.8%), female (51.8%), had 12 years of education or more (62.7%), and were unmarried (57.3%). A majority were employed (59.1%), received treatment for 6-12 months (46.4%), and exhibited no comorbidities (90.9%). The mean treatment adherence score among patients was 8.15 ± 2.02. Sixty-three patients (57.3%) demonstrated good adherence to their medication. The correlation test results between treatment adherence and the quality of life in patients with depression indicated a statistically significant relationship ($p < 0.001$; $r = 0.550$). Increased adherence to medication correlates positively with improved quality of life in patients suffering from depression.

INTRODUCTION

Depression has been identified as a critical public health concern due to its deleterious effects on people, families, and society across the globe (Bhowmik et al., 2012; Hansson, 2002; Puspitasari et al., 2020). Approximately 4% of the population suffers from depression, comprising 5.7% of adults (4.6% of men and 6.9% of women), and 5.9% of individuals over 70 years. Approximately 332 million individuals globally suffer from depression (Global Burden Disease, 2021; World Health Organization, 2022). While 1.4% people in Indonesia have depression, with the highest prevalence of depression in the young adult group (15-24 years old), about 2% (Ministry of Health, Republic of Indonesia, 2024).

The World Health Organization (WHO) defines medication non-adherence as "a case in which a person's behavior in taking medication does not correspond with agreed-upon recommendations from health personnel" (World Health Organization, 2003). Individuals prescribed psychotropic medications for mental health disorders, such as depression, face a significant risk of encountering medication-related issues. Medication non-adherence among patients with major depressive disorders is approximately 50% across 16 countries in Europe, Asia, Africa, and North America (Semahegn et al., 2020). Non-adherence to

psychotropic medication may result in the worsening of the illness, diminished treatment efficacy, or decreased responsiveness to future interventions. Additional consequences of non-adherence encompass re-hospitalization, reduced quality of life or psychosocial outcomes, symptom relapse, aggravation of co-morbid medical conditions, inefficient utilization of healthcare resources, and heightened risk of suicide (Gureje et al., 2008; Mishra et al., 2015; Semahegn et al., 2020).

Studies examining adherence and quality of life among patients with depression in Indonesia are still lacking. According to one study of young people with depression, 76.2% of them did not adhere to treatment, with a mean QoL of 68.9 (Munira et al., 2025). Following the prescribed medication regimen is crucial for patients to enhance their quality of life. Quality of life (QoL) represents a comprehensive measure of the impact of diseases and their treatments on an individual's overall functioning and well-being. It encompasses the physical, psychological, and social dimensions of health, illustrating both the beneficial and detrimental effects on an individual's ability to lead a fulfilling life (Mishra et al., 2025).

Research on the correlation between compliance and quality of life in Indonesia, particularly in Surakarta, has not yet been conducted. To fill this gap, this study aimed to explore medication adherence, quality of life, and the correlation between medication adherence and quality of life among patients with depression attending a psychiatric hospital in Surakarta, Indonesia.

RESEARCH METHODS

Study design

This observational cross-sectional study was conducted from March to May 2025.

Population target and Samples

The target population for this study comprised all male or female patients aged 18 or older with depression diagnosed in the outpatient department of a psychiatric hospital in Surakarta, who were receiving antidepressant treatment for at least 3 months and were willing to complete the questionnaire by signing the informed consent form. Depression was diagnosed based on ICD-10 (Health (UK), 2010). Patients with severe mental disorders, schizophrenia, and brain function decline were excluded from this study.

The sample size in this study follows the formula for a single population ($n = Z_{\alpha}^2 p(1 - p)/d^2$) (Charan & Biswas, 2013). In this case, α is 0.05, corresponding to a 95% confidence interval. The Zα value is 1.96. The d value is the researcher's prediction error, or margin of error, set at 5%. Meanwhile, p is the proportion value obtained from the prevalence of depression in Indonesia, which was 0.067%~0.07% (DepKes RI, 2019). Thus, the sample size is 100 with an attrition rate of 10%, resulting in 110.

Data Collecting

Participants were determined through convenience sampling. Primary data were gathered through the distribution of questionnaires or the execution of direct interviews with patients diagnosed with depression. At the same time, data on disease conditions and medications were collected from patients' hospital medical records.

Questionnaire

The Medication Adherence Rating Scale-10 (MARS-10) is used to evaluate medication adherence in patients with depression (Thompson et al., 2000). The scale consists of 10 questions, each answered with a "yes" or "no" response. A score of 0 is awarded for a "yes" response to queries 1-6 and 9-10, while a score of 1 is awarded for a "no" response. Concurrently, a score of 1 is awarded for a "yes" response to queries 7-8, while a score of 0 is awarded for a "no" response. Adherence levels are classified as compliant (high adherence) when the total score from all queries exceeds the mean, and as non-compliant (low adherence) when the score is below the mean. MARS-10 comprises ten items that evaluate medication adherence behavior, attitudes toward medication use, and adverse side effects of antidepressants.

The World Health Organization Quality of Life (WHOQoL)-BREF instrument is used to assess the quality of life in patients with depression (Purba et al., 2018). This instrument consists of

26 self-report questions that respondents must answer based on their current state of health. The questionnaire's first and second questions assess the general health and overall quality of life. This instrument is divided into four principal domains. Questions 3, 4, 10, 15, 16, 17, and 18 are included in Domain 1 (Physical Health). Items 5, 6, 7, 11, 19, and 26 are included in Domain 2 (Psychological). Items 20, 21, and 22 are included in Domain 3 (Social). Items 8, 9, 12, 13, 14, 23, 24, and 25 are included in Domain 4 (Environment). In general, the majority of the items in this instrument are positively framed, except for three items that are negatively framed: items 3, 4, and 26. The questionnaire generates a score for each domain, which is converted to a 0-100 scale. Participants are required to select a number from 1 to 5 for each question. According to the WHO questionnaire usage guidelines, the WHO does not set quality-of-life thresholds for questionnaires (WHO, 2025). The scoring method uses a criterion of ≤ the Mean total score of QoL to indicate poor quality of life and > the Mean total score of QoL to indicate good quality of life (Wong et al., 2018).

Validity and Reliability

Validity and reliability for the MARS-10 and WHOQoL-BREF questionnaire based on 30 respondents. These respondents differed from those who completed the main data research. The Pearson product-moment correlation method was used to test the validity by evaluating the results using the critical value table of the Pearson Product-Moment Correlation Coefficient ($r > 0.361$) (Wijaya & Kloping, 2021). The r-value is significantly higher than the critical value in the Pearson Product-Moment Correlation Coefficient table, as determined by the Pearson correlation analysis. For MARS-10, r-values between 0.423 and 0.770. For the WHOQoL-BREF, the r values for each domain are 0.503-0.792, 0.515-0.823, 0.694-0.847, and 0.392-0.597.

The reliability test is considered reliable when respondents' answers to the questions demonstrate consistent stability, with a Cronbach's Alpha value of ≥ 0.70 (Taherdoost, 2016). The reliability of the MARS-10 questionnaire in this study is 0.719. Reliability test results for the WHOQoL-BREF questionnaire across each domain with a Cronbach's Alpha of 0.647 for the Physical Domain, 0.736 for the Psychological Domain, 0.665 for the Social Domain, and 0.654 for the Environmental Domain.

Data Analysis

The data were analysed using Analytical Statistics Version 29 of the Statistical Package for Social Sciences. Categorical data were represented as percentages, whereas continuous data were displayed as mean ± standard deviation (SD). The normality of the variable was evaluated using the Kolmogorov–Smirnov test. Using the Spearman correlation coefficient, the relationship between reported medication adherence scores and quality-of-life index values was assessed. The significance threshold was set at $p < 0.05$.

RESULTS

Socio-demographic and clinical data

Of the 110 respondents, 53 (48.2%) were male, while 57 (51.8%) were female. Most of the patients with depression were aged within the range of 18 to 40 years, with a mean ± SD of 36.12±11.7 years. Approximately half of the patients (57.3%) were single, 37.3% had a high school education or less, and 59.1% were employed. The majority of patients (90.9%), as indicated in **Table 1**, did not have other illnesses and received monotherapy (52.7%), with Selective Serotonin Reuptake Inhibitors (SSRIs) being the most commonly prescribed (37.3%). Additionally, 55.5% of patients took their medication twice daily.

Medication adherence of study participants and the level of adherence

Overall, the medication adherence in patients with depression scores was 8,15 ± 2,02. **Figure 1** presents the medication adherence response, indicating that the majority of respondents (86%) consistently took their antidepressant medication (Q2) and understood that taking medication can help them avoid getting sick (Q8) (87%). Additionally, 86% of participants reported feeling that their thoughts are clearer when taking the medicine. Around a quarter of respondents acknowledged forgetting to take their medications (Q1). Furthermore, only 18%

respondents stop taking their medicine when they feel worse (Q4). The results shown in **Figure 2** indicate that 57% of participants demonstrated good adherence to their prescribed medication.

Table 1. Socio-demographic and clinical data of respondents with depression at the Surakarta Psychiatric Hospital

Variable	Frequency (n=110)	Percentage (%)
Age (year)		
≥18 - 40	69	62.7
40-60	38	34.5
>60	3	2.7
Gender		
Male	53	48.2
Female	57	51.8
Education		
High school/below	41	37.3
Undergraduate/ graduate	69	62.7
Employment status		
Employeed	65	59.1
Unemployed	43	39.1
Retired	2	1.8
Marital status		
Single	63	57.3
Married	39	35.5
Divorced/widowed	8	7.3
Duration of medication		
≤6 months	33	30
>6 - 12 months	51	46.4
>12 months	26	23.6
Other illness		
Yes	10	9.1
No	100	90.9
Medication		
Monotherapy	58	52.7
Combination	52	47.3
Class of medicine		
SSRI	41	37.3
SNRI	5	4.5
TCA	14	12.7
SSRI + SSRI	11	10
SSRI + SNRI	1	0,9
TCA + SSRI	28	25.5
TCA + SNRI	2	1.8
antipsychotic + SSRI	7	6.4
SSRI + SSRI + antipsychotic	1	0.9
Medication frequency taking		
Once a day	49	44.5
Twice a day or more	61	55.5

Note: SSRI: Selective Serotonin Reuptake Inhibitor, SNRI: Selective Norepinephrine Reuptake Inhibitor, TCA: Tricyclic Antidepressant, Antipsychotic (Risperidone)

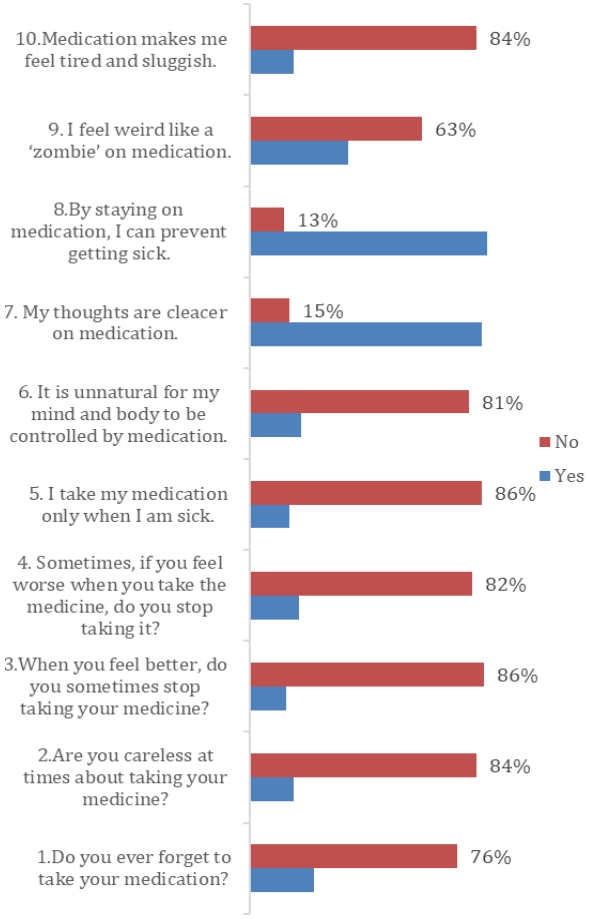

Figure 1. Medication adherence responses in study participants with depression at the Surakarta Psychiatric Hospital

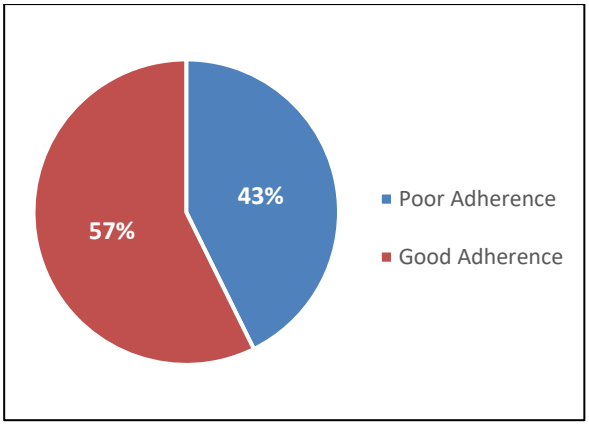

Figure 2. Level of medication adherence in study participants with depression at the Surakarta Psychiatric Hospital

Quality of Life of study participants and the level of QoL

Table 2 presents the domain-specific quality-of-life scores for the study sample. The highest mean (SD) score was observed in the physical health domain (78.59 ± 15.87), followed by the overall QoL (75.77 ± 14.67), the environment domain (75.19 ± 16.43), psychological health (74.24 ± 16.15), and social relationships (71.33 ± 19.15). Meanwhile, regarding QoL, 54.5% of participants reported a high QoL, whereas in the overall score, only 45.5% achieved a high QoL, as shown in **Table 3**.

Table 2. WHOQoL-BREF responses in study participants with depression at the Surakarta Psychiatric Hospital

Dimension	Item Questions	Level= n (%); n=110 (100%)				
		1*	2*	3*	4*	5*
Physical Health	P3≠	-	10 (9.1)	16 (14.5)	51 (46.4)	33 (30)
	P4≠	-	10 (9.1)	10 (9.1)	50 (45.5)	40 (36.4)
	P10	-	5 (4.5)	29 (26.4)	49 (44.5)	27 (24.5)
	P15	-	13 (11.8)	25 (22.7)	40 (36.4)	32 (29.1)
	P16	-	10 (9.1)	7 (6.4)	56 (50.9)	37 (33.6)
	P17	-	6 (5.5)	29 (26.4)	44 (23.5)	31 (28.2)
	P18	-	16 (14.5)	27 (24.5)	38 (20.3)	29 (26.4)
		Mean ± SD: 78.59±15.87				
Psychological	P5	1 (0,9)	10 (9.1)	27 (24.5)	53 (48.2)	19 (17.3)
	P6	-	13 (11.8)	32 (29.1)	51 (46.4)	14 (12.7)
	P7	-	14 (12.7)	27 (24.5)	44 (40)	25 (22.7)
	P11	-	17 (15.5)	25 (22.7)	45 (40.9)	23 (20.9)
	P19	-	16 (14.5)	35 (31,8)	36 (32.7)	23 (20.9)
	P26≠	-	13 (11.8)	16 (14.5)	44 (40)	37 (33.6)
		Mean ± SD: 74.24±16.15				
Social	P20	-	14 (12.7)	34 (30.9)	31 (28.2)	31 (28.2)
	P21	-	27 (24.5)	46 (41.8)	19 (17.3)	18 (16.4)
	P22	-	22 (20)	17 (15.5)	40 (36.4)	31 (28.2)
		Mean ± SD: 71.33 ± 19.15				
Environment	P8	-	8 (7.3)	23 (20.9)	48 (43.6)	31 (28.2)
	P9	-	13 (11.8)	18 (16.4)	46 (41.8)	33 (30)
	P12	-	16 (14.5)	29 (26.4)	42 (38.2)	23 (20.9)
	P13	-	15 (13.6)	38 (34.5)	38 (34.5)	19 (17.3)
	P14	2 (1,8)	27 (24.5)	31 (28.2)	30 (27.3)	20 (18.2)
	P23	-	10 (9.1)	23 (20.9)	46 (41.8)	31 (28.2)
	P24	-	13 (11,8)	10 (9.1)	44 (40)	43 (39.1)
	P25	1 (0,9)	13 (11.8)	30 (27.3)	38 (34.5)	28 (25.5)
		Mean ± SD: 75.19±16.43				
Overall score	P1	-	1 (0.9)	12 (10.9)	58 (52.7)	39 (35.5)
	P2	-	-	15 (13.6)	58 (52.7)	37 (33.6)
		Mean ± SD: 75.77±14.67				

Note: *1: (Not at all/ Very dissatisfied), *2: (A little/ Dissatisfied), *3: (Moderately/ Neither satisfied nor dissatisfied), *4: (Mostly/Satisfied), ≠: reversed-scores.

Table 3. Level of QoL in study participants with depression at the Surakarta Psychiatric Hospital

Category	Domains				
	Physical health	Psychological health	Social relationship	Environment	Overall QoL
	n (%)	n (%)	n (%)	n (%)	n (%)
Low QoL	55 (50)	56 (50.9)	50 (45.5)	61 (55.5)	56 (50.9)
High QoL	55 (50)	54 (49.1)	60 (54.5)	49 (44.5)	50 (45.5)

Table 4. Correlation between medication adherence and quality of life

			Domain 1	Domain 2	Domain 3	Domain 4	Overall QoL
Spearman's rho**	Medication adherence	Correlation coefficient	0.429**	0.513**	0.448**	0.508**	0.550**
		Sig. 2 (tailed)	0.000	0.000	0.000	0.000	0,000

Note: **: Correlation is significant at the 0.01 level (2-tailed).

Correlation between the overall score of medication adherence and each domain of QoL

As shown in **Table 4**, the total medication adherence score and each domain QoL score exhibit positive correlations of 0.429, 0.513, 0.448, 0.508, and 0.550, respectively. This condition suggests that increased medication adherence will result in a better quality of life. Consequently, improved medication adherence correlates with enhanced QoL.

DISCUSSION

We conducted this study to investigate medication adherence, quality of life, and their relationship at a psychiatric hospital in Surakarta, Central Java, Indonesia. We selected Central Java as the site for our research due to data from the 2023 Indonesian Health Survey indicating a significant prevalence of depression, affecting 1% of the population (Ministry of Health, Republic of Indonesia, 2024).

This study revealed a higher prevalence of depression among female patients as opposed to male patients. This aligns with the study's findings in the United States (Sirey et al., 2001), France (Baeza-Velasco et al., 2019), and India (Ganesan et al., 2019). Research indicates that women are more prone to experiencing emotional issues and depression compared to men, influenced by biological factors, psychological traits, and social environmental influences (Suryaputri et al., 2021; Tang & Zhang, 2022). In this study, the age category indicated that depression was most prevalent among young adults. The findings align with the research conducted by Kumari et al., which identified that 40% of depression cases are observed in young individuals (Kumari et al., 2024). Previous research indicates that factors influencing the prevalence of depression in young adults include smoking, alcohol abuse, parental depression, and having chronic illnesses (Munira et al., 2025; Suryaputri et al., 2021).

In this study, 57.3% of patients showed good medication adherence (**Figure 2**). This is superior to the findings of Velasco et al., who found that only 29.7% of patients adhered to their treatment plan. Another research has shown that respondents with suboptimal compliance (71%) had more severe depression symptoms, were more frequently hospitalized for psychiatric treatment, had suicidal thoughts, experienced physical pain, had unpleasant medication side effects, and had a history of emotional abuse (Baeza-Velasco et al., 2019).

Our study reveals that the majority of patients indicated "often/feeling satisfied" across four domains of the WHOQoL-BREF. The conditions demonstrate the treatment's beneficial effects on the respondents, as evidenced by improvements in their quality of life. This enhancement encompasses multiple dimensions, including physical, psychological, social, and environmental factors, all of which collectively influence individual well-being. The findings support the effectiveness of the therapy and demonstrate that appropriate treatment management is crucial for improving patients' overall condition. The findings align with a

previous study that showed all 26 items in the WHOQoL-BREF exhibited a left skew, suggesting a ceiling effect across all items (Kalfoss et al., 2021). While QoL among these depression patients was similar to that reported in a study in China, which indicated that the average scores across all areas on the WHOQoL-BREF questionnaire varied from 59% to 62%, suggesting that certain depression patients experienced a high quality of life (Cao et al., 2016).

This study demonstrates that increased medication adherence is associated with enhanced QoL. The findings aligned with the research by Santi et al. (2024), indicating that clinical improvement and quality of life are distinctly correlated with the degree of patient medication adherence. Prior research has shown that the quality of life and treatment adherence decline in patients with untreated depression. The authors determined that elevated friction levels, regular visits, an enhanced quality of life, and better medication adherence are essential for practical antidepressant efficacy (Santi et al., 2023). Improvements in QoL may be related to better symptom control, reduced relapse risk, and increased psychosocial functioning, which are commonly associated with consistent antidepressant use.

Limitation

This study was conducted at a single psychiatric hospital in the Surakarta region, so it may not reflect the entire Indonesian population. This study demonstrates only the impact of medication adherence on quality of life, neglecting to investigate other factors that may influence it, such as treatment duration, type of treatment, and comorbidities. This study also used a mean-based cut-off for categorization, which may not fully reflect clinical adherence thresholds. Furthermore, some WHOQOL-BREF domains showed moderate internal reliability (<0.70), indicating cautious interpretation of domain scores.

CONCLUSION

In our study, 57.3% of participants showed good adherence, while only 45.5% reported a high quality of life. Increased adherence to treatment correlates positively with improved quality of life in patients suffering from depression. This study, although based on a limited sample size, adds valuable insights to the understanding of compliance and quality of life in patients with depression in Indonesia. Educational interventions by pharmacists or psychiatrists are essential to enhance medication adherence and quality of life for patients with depression.

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AUTHORS' CONTRIBUTIONS

DA: Data curation, Formal Analysis, Investigation, Software, Writing – original draft. TY: Data curation, Conceptualization, Methodology, Formal Analysis, Writing – original draft, Writing review & editing.

CONFLICT OF INTERESTS

The authors state that the study was done without any commercial or financial links that could be seen as a potential conflict of interest.

ETHICAL CONSIDERATION

Ethical approval for this study was obtained from the Health Research Ethics Committee of the Faculty of Science, Universitas Muhammadiyah Surakarta, with No. 987/KEPK-FIK/III/2025-March 17, 2025.

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