

Overview of Medication Adherence in Patients with Diabetes Mellitus

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Article Info	Abstract
Article History Submitted, 2026-05-13 Accepted, 2026-06-24 Published, 2026-06-30	Medication adherence is an important factor in the successful management of diabetes mellitus. Poor adherence to medication therapy may lead to suboptimal blood glucose control and increase the risk of complications. This study aimed to describe medication adherence among diabetes mellitus patients at Puskesmas Permata Kecubung, Puskesmas Melata, and Sultan Imanuddin Hospital. This study used a descriptive quantitative design with a cross-sectional approach. A total of 116 respondents were selected using purposive sampling. Data were collected over four days starting from April 12, 2026 using a medication adherence questionnaire. Data were analyzed using univariate analysis in the form of frequency distribution and percentage. The results showed that most respondents were in the adherent category (54 respondents; 46.6%), followed by moderately adherent (39 respondents; 33.6%), and non-adherent (23 respondents; 19.8%). In conclusion, medication adherence among diabetes mellitus patients in the three study sites was generally in the adherent category, although some patients were still non-adherent. Therefore, health education and treatment monitoring by healthcare workers need to be improved.
Keywords: Medication adherence, diabetes mellitus, patients, descriptive quantitative	

Introduction

The global epidemiological transition has shifted the dominant disease burden from infectious diseases to non-communicable diseases, including diabetes mellitus. According to the World Health Organization (WHO, 2023), diabetes mellitus is one of the major chronic diseases contributing to increased morbidity and mortality worldwide. Diabetes is also associated with serious complications such as cardiovascular disease, kidney failure, neuropathy, and retinopathy. In Indonesia, the prevalence of diabetes mellitus continues to rise, with more than 10% of the adult population estimated to suffer from diabetes (Ministry of Health of the Republic of Indonesia, 2023).

At the primary healthcare level, diabetes mellitus remains a significant public health problem, particularly in relation to blood glucose control, prevention of complications, and adherence to medication therapy. Medication adherence is an important factor in achieving therapeutic goals and preventing long-term complications. However, non-adherence to diabetes medication is still common and may lead to uncontrolled blood glucose levels, therapeutic failure, increased risk of complications, and higher healthcare costs (Zulkarnain & Farapti, 2023; Rahmawati, 2024). Several factors influence medication adherence among patients with diabetes mellitus, including patient knowledge, family support, access to healthcare services, motivation, and the role of healthcare workers in providing education and monitoring(Lalla & Rumatiga, 2022).

Previous research results in several health facilities show the importance of knowledge and support factors in improving the adherence of patients with diabetes mellitus. Research by Tasnim & Sarlinda (2022) It shows that the role of health workers in providing education and monitoring is significantly related to patient compliance. In addition, research by Prasetya et al (2023) and Domili & Anasiru (2024) stating that patients with a good level of knowledge and strong family support tend to be more compliant in undergoing diabetes treatment therapy. These findings show that patient compliance is the result of the interaction of various factors, both individual, social, and health care systems.

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The urgency of this research is based on the increasing burden of diabetes mellitus as part of the global epidemiological transition which is now dominated by non-communicable diseases with a broad impact on quality of life and mortality rates. In Indonesia, the trend of increasing prevalence of diabetes, including at the primary health service level, shows that controlling the disease is still a major challenge, especially in maintaining patient adherence to drug therapy. Non-adherence to medication has been shown to contribute to poor glycemic control and an increased risk of serious complications that not only harm individual patients, but also increase the burden on the healthcare system. In addition, patient compliance is influenced by various complex factors involving aspects of knowledge, behavior, social support, and access to health services, requiring a comprehensive and data-driven understanding of local data. Therefore, this study is important to provide a real picture of the level of adherence of diabetes mellitus patients in primary health facilities, so that it can be the basis for designing more effective, targeted, and sustainable interventions to improve the success of disease management and prevent future complications.

Methods

This study employed a descriptive quantitative design to describe medication adherence among patients with diabetes mellitus without providing any intervention or treatment to the studied variables. The study was conducted over four consecutive days, from April 12–15, 2026, at three healthcare facilities: Permata Kecubung Health Center, Melata Health Center, and Sultan Imanuddin Hospital. The four-day data collection period was considered sufficient because the study used a descriptive approach and included all eligible patients who attended the healthcare facilities during the observation period. In addition, the selected facilities have relatively stable daily patient visit patterns, allowing researchers to obtain representative data within the available timeframe.

The study population consisted of all patients with diabetes mellitus who were undergoing treatment and registered at the three study sites. The sampling technique used was purposive sampling, in which respondents were selected based on specific inclusion criteria relevant to the research objectives. Purposive sampling was chosen instead of consecutive sampling because the study specifically targeted patients who met predetermined eligibility criteria, including the ability to understand and complete the questionnaire independently. During the four-day study period, all eligible patients who met the inclusion criteria were invited to participate. Therefore, the total sample of 116 respondents represented all accessible and eligible patients during the data collection period rather than a statistically predetermined minimum sample size. The inclusion criteria were patients diagnosed with diabetes mellitus, currently undergoing treatment (oral medication and/or insulin therapy), present during the data collection period, willing to participate by signing informed consent, and able to read and understand the questionnaire. Exclusion criteria included patients with unstable health conditions, incomplete questionnaire responses, or withdrawal from the study during the research process.

The research instrument consisted of two sections. The first section was an observation sheet used to record respondent characteristics, including age, gender, and education level. The second section was a medication adherence questionnaire developed based on the diabetes mellitus management guidelines from the Ministry of Health of the Republic of Indonesia and previous related studies. The questionnaire consisted of 10 items covering medication-taking regularity, adherence to dosage and schedule, attendance at control visits, and continuity of treatment. Each item used a Likert-scale response format with four response options ranging from “never” to “always.” The total adherence score ranged from 10–40 and was categorized as high adherence (76–100%), moderate adherence (56–75%), and low adherence (<56%).

Prior to data collection, the questionnaire underwent validity and reliability testing on 30 respondents with characteristics similar to the study population. The validity test showed that all item correlation coefficients exceeded the critical r -table value ($r > 0.361$), indicating that all items were valid. Reliability testing using Cronbach’s alpha produced a coefficient of 0.82, indicating good internal consistency and reliability of the instrument.

The data collection procedure began with coordination and obtaining permission from each healthcare facility. Eligible respondents were informed about the study objectives and procedures and were asked to provide written informed consent before participation. Respondents then completed the questionnaire independently, with assistance from the researcher when necessary. Respondent characteristic data were recorded using the observation sheet. Ethical principles applied in this study included informed consent, anonymity, confidentiality, veracity, and justice. Participation was voluntary, and respondents had the right to refuse or withdraw at any time without affecting the healthcare services they received. All respondent identities were kept confidential and were not included in the research report.

Data processing included editing, coding, scoring, and tabulation. The data were entered into Microsoft Excel and analyzed using SPSS version 26. Descriptive (univariate) analysis was conducted to present the characteristics of respondents and the distribution of medication

adherence levels in the form of frequencies and percentages. The analysis provided an overview of medication adherence among patients with diabetes mellitus at the three selected healthcare facilities.

Results and Discussion

Table 1. Distribution and Characteristics of Respondents Based on Research Location						
Features	Category	Amethyst Gem (n=40)	Melata (n=38)	Sultan Imanuddin (n=38)	Total (n=116)	%
Age	<30 years old	6	5	4	15	12,9%
	30–45 years	22	20	18	60	51,7%
	>45 years old	12	13	16	41	35,3%
Gender	Male	16	15	14	45	38,8%
	Women	24	23	24	71	61,2%
Education	Low	14	13	12	39	33,6%
	Intermediate	20	18	20	58	50,0%
	Height	6	7	6	19	16,4%
Number of Respondents		40	38	38	116	100%

Based on the results of the study in Table 1, out of a total of 116 respondents, the majority of diabetes mellitus patients were in the age group of 30–45 years, namely 60 respondents (51.7%), followed by 41 respondents >45 years old (35.3%), and 15 respondents <30 years old (12.9%). Based on gender, most of the respondents were female as many as 71 respondents (61.2%), while male as many as 45 respondents (38.8%). Judging from the level of education, most of the respondents had secondary education, namely 58 respondents (50%), followed by primary education with 39 respondents (33.6%), and higher education with 19 respondents (16.4%).

The dominance of the 30–45 year age group shows that diabetes mellitus not only occurs in old age, but also begins to be found in productive age. This phenomenon can occur because at productive age individuals tend to have unhealthy lifestyles such as diets high in sugar and fat, lack of physical activity, and high levels of stress due to work. This condition can increase the risk of insulin resistance leading to diabetes mellitus. In addition, this age group is also still socially and economically active so that it is more often exposed to metabolic risk factors than the younger age group.

The results of this study are in line with the research conducted byPrasetya et al (2023) which shows that the majority of people with diabetes mellitus are in the productive age range of 30-50 years due to changes in modern lifestyles. ResearchTasnim & Sarlinda (2022) It also mentioned that the increase in diabetes cases in productive age is closely related to the consumption of high-sugar foods and lack of physical activity. In addition, the researchSuyanto & Sulistyowati (2020) It found that the early to middle adult age group had a higher risk of developing metabolic disorders compared to young age due to the accumulation of long-term risk factors.

Based on gender, the results of the study show that women experience diabetes mellitus more than men. This can be caused by hormonal factors, especially in women who have entered perimenopause or menopause, where there is a decrease in the hormone estrogen which affects insulin sensitivity. In addition, women also tend to have a higher risk of weight gain which is a predisposing factor for diabetes mellitus.

These findings are supported by researchDomili & Anasiru (2024) which states that the prevalence of diabetes mellitus is higher in women due to hormonal changes and lower physical activity tendencies than men. ResearchWidiastuti et al (2024) It also shows that women have a greater risk of developing central obesity-related metabolic disorders. In addition, a WHO study (2021) reports that globally the prevalence of diabetes in women shows a significant increasing trend with age and lifestyle changes.

Based on education level, the results of the study show that most of the respondents have secondary education. Education level relates to an individual's ability to understand health information, including the management of diabetes mellitus. Although secondary education is sufficient to receive basic information, it is not necessarily optimal in understanding the importance of comprehensive medication adherence. This can affect the patient's health behavior in undergoing long-term therapy.

This is in line with researchMulfianda et al (2024) which states that lower to secondary education levels are related to low health literacy in patients with diabetes mellitus. ResearchRohmatulloh et al (2024) It also shows that patients with higher education tend to have better medication adherence due to better ability to understand medical instructions. In

addition, the researchFerawati & Hadi Sulisty (2020) emphasized that education is an important factor in determining self-management behavior in diabetic patients.

When associated with health behavioral theory, especially the Health Belief Model (HBM), individual characteristics such as age, gender, and education can affect a person's perception of susceptibility, disease severity, and benefits of health measures. Individuals of productive age, women, and secondary education have a variety of perceptions that can influence health behaviors including adherence in the management of diabetes mellitus.

Based on this description, the researcher argues that the characteristics of the respondents, which are dominated by productive age, women, and secondary education, describe the group that has a high risk of diabetes mellitus as well as having challenges in long-term disease management, so there is a need for more targeted and sustainable health education improvement.

Table 2. Overview of Medication Compliance for Diabetes Mellitus Patients by Location

Location	Obedient		Simply Obey		Non-compliant	
	(n)	(%)	(n)	(%)	(n)	(%)
Amethyst Gems	18	45,0	14	35,0	8	20,0
Honeydew	17	44,7	13	34,2	8	21,1
Sultan Imanuddin	19	50,0	12	31,6	7	18,4
Total	54	46,6	39	33,6	23	19,8

Based on the results of the study in Table 2, from a total of 116 respondents, it was found that most of the patients with diabetes mellitus were in the compliant category, namely 54 respondents (46.6%), followed by the category of compliant as many as 39 respondents (33.6%), and the non-compliant category as many as 23 respondents (19.8%). When viewed based on location, the level of compliance is relatively not much different, with the highest proportion of compliance being found at Sultan Imanuddin Hospital, which is 19 respondents (50.0%), compared to Permata Kecubung Health Center with 18 respondents (45.0%) and Melata Health Center with 17 respondents (44.7%).

These results show that although most of the respondents have been in the compliant category, there are still quite a few patients who are not completely consistent in carrying out drug therapy. This phenomenon can occur because medication adherence in patients with diabetes mellitus is a long-term behavior that is influenced by many factors, such as the patient's understanding of the disease, family support, access to health services, drug side effects, and individual motivation in maintaining their health condition. In addition, saturation in undergoing lifelong treatment is also often a major factor in declining patient compliance.

Differences in compliance levels between locations can also be influenced by the variety of health services and education provided by health workers. Hospitals generally have more complete facilities and control systems than health centers, so patients tend to be more monitored in the use of drugs. Meanwhile, at the health center level, limited service time and a larger number of patients can affect the intensity of patient compliance education and monitoring.

The results of this study are in line with the research Prasetya et al (2023) which shows that most patients with diabetes mellitus are in the category of moderate to good adherence, but non-compliance is still found due to low patient awareness in long-term therapy. Research Fijianto et al (2024) It also mentions that the level of patient compliance is influenced by family support and regularity of control to health facilities. In addition, the research Tasnim & Sarlinda (2022) found that patients with better access to health care tended to have higher levels of adherence than patients with limited access.

When associated with the Health Belief Model (HBM) theory, medication adherence is influenced by an individual's perception of the susceptibility and severity of the disease, the benefits of treatment, and perceived barriers. Patients who have the perception that diabetes mellitus is a serious disease and require long-term treatment tend to be more compliant in taking medication. In contrast, patients who feel that their condition has improved or do not feel symptoms often show decreased adherence.

In addition, the theory of diabetes self-management also explains that medication adherence is part of the patient's ability to manage chronic diseases independently, including in terms of drug consumption, diet, physical activity, and routine control. The better the patient's self-management ability, the higher the level of adherence to drug therapy.

Based on this description, the researcher argues that medication adherence to diabetes mellitus patients is quite good but still needs to be improved, especially through strengthening health education, increasing the role of family, and optimizing monitoring from health workers so that patients can maintain treatment compliance in a sustainable manner.

Conclusion

Based on the results of the study, it can be concluded that most of the respondents are in the category of compliant in taking diabetes mellitus medication, namely 54 respondents (46.6%), followed by quite compliant as many as 39 respondents (33.6%), and non-compliant as many as 23 respondents (19.8%). The characteristics of the respondents showed that the majority were 30–45 years old (51.7%), female (61.2%), and had a secondary level of education (50%). This illustrates that medication adherence to diabetes mellitus patients in the three study sites is still quite good, but there are still some patients who have not complied, so efforts are needed to improve health education, strengthen family support, and optimize the role of health workers in increasing treatment compliance in an ongoing manner.

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