

INFORMASI ARTIKEL

Received: August, 07, 2025

Revised: August, 27, 2025

Available online: September, 06, 2025

at: <https://e-jurnal.iphorr.com/index.php/mhc>

Medication adherence and management of blood glucose in type 2 diabetes mellitus

Fragestha Erwan, Andoko*, Triyoso, Dennti Kurniasih

Fakultas Ilmu Kesehatan, Universitas Malahayati

Corresponding author: *E-mail: andoko2013@gmail.com

Abstract

Background: Type 2 diabetes mellitus is a prevalent chronic disease that can lead to serious complications if not properly managed. One of the key factors in diabetes management is patient adherence to medication.

Purpose: To analyze the relationship between medication adherence and blood glucose levels in patients with type 2 diabetes mellitus.

Method: A analytical survey design with a cross-sectional approach. A total of 146 respondents were selected using purposive sampling. Data were collected using questionnaires and analyzed using univariate and bivariate analysis with the chi-square test.

Results: A total of 61.0% of respondents demonstrated high medication adherence, and 48.6% had low blood glucose levels. Statistical analysis showed a p-value of 0.001 ($p < 0.05$), indicating a significant relationship between medication adherence and blood glucose levels.

Conclusion: There is a significant relationship between medication adherence and blood glucose levels in patients with type 2 diabetes mellitus.

Keywords: Adherence; Blood Glucose Levels; Type 2 Diabetes Mellitus.

INTRODUCTION

Diabetes Mellitus (DM) is a group of metabolic disorders characterized by elevated blood glucose levels (hyperglycemia). The primary causes of hyperglycemia are the body's inability to produce sufficient insulin or the inability of body cells to respond effectively to insulin. According to data from the World Health Organization (WHO), DM is one of the most rapidly growing chronic diseases worldwide and has the potential to cause various serious complications if not properly managed. Uncontrolled increases in blood glucose levels can lead to damage to various body organs, especially blood vessels and nerves, affecting the body's systems as a whole (Virdi, Daskiran, Nigam, Kozma, & Raja, 2022). Diabetes is a leading cause of blindness, heart attacks, strokes, kidney failure, and lower limb amputations (Moreland, Volkening, Lawlor,

Chalmers, Anderson, & Laffel, 2016). In 2015, approximately 415 million adults globally were living with diabetes, and by 2040, this number is projected to reach 642 million. In North America, about 44.3 million people are affected, while the Western Pacific accounts for 153.2 million, and in the Asian regional area, around 96 million individuals. Diabetes caused approximately 3.7 million deaths worldwide. In the United States, DM was the seventh leading cause of death, as recorded on 79,535 death certificates. Around 7.6 million people in Indonesia suffer from diabetes, with an additional 12.6 million individuals in a pre-diabetic state, indicating a potential rise in the number of DM cases in the future. The prevalence of DM varies by province, with Jakarta recording the highest prevalence at 3.1%, while the Papua Highlands Province has the lowest at 0.2%. In

Lampung Province, the number of people with DM is quite significant, with Bandar Lampung City reporting the highest number at 18.664 cases, while Pesisir Barat Regency recorded only 927 cases. These data show disparities in DM prevalence that require special attention (Gonder-Frederick, Cox, Pohl, & Carter, 2024).

Uncontrolled Diabetes Mellitus can result in a range of complications that worsen over time. These complications can affect nearly every organ system. In Indonesia, the most commonly found complication among diabetic patients is neuropathy, affecting 54% of patients. Other complications include hypoglycemia (16.1%), retinopathy (9.7%), and nephropathy (Saputri, 2020). These complications not only threaten physical health but also impair quality of life, work capability, and can ultimately lead to disability and death. Diabetic neuropathy, for instance, may cause nerve damage, particularly in the feet, increasing the risk of diabetic ulcers and, in severe cases, leading to amputation. Moreover, diabetic retinopathy causes damage to the small blood vessels in the retina, which can result in blindness if left untreated. Heart disease and stroke are also more prevalent in individuals with diabetes, with higher mortality risks compared to non-diabetics (Kusaeri, Nuâ, & Ardian, 2020).

Treatment for Diabetes Mellitus generally involves a multidisciplinary approach, including a low-sugar diet, medication, and regular physical activity. Medications include oral drugs that help lower blood glucose levels and injectable insulin to replace the body's inadequate insulin function. Effective blood glucose control greatly depends on the patient's adherence to prescribed medications and recommended diet. However, medication adherence remains one of the main challenges in managing DM, as patients often struggle to consistently follow treatment regimens, especially when multiple medications are involved. Adherence is a key factor in the effective management of diabetes. Medication adherence refers to the behavior of patients in following medical instructions, including taking medication on schedule, managing their diet, and exercising as recommended. Nonetheless, adherence problems are common, particularly among patients with type 2 diabetes. Several factors contribute to this issue, such as the

number of medications taken, difficulties in changing eating habits, and a lack of understanding about the importance of glucose control (Murdiqi, 2020). The number of medications significantly affects adherence—the more medications taken, the lower the adherence level. Therefore, simplified therapies and fixed-dose combinations are highly recommended. The DM diet aims to improve eating and exercise habits to maintain metabolic control (Rahman, 2018).

Several previous studies have shown a significant relationship between treatment adherence and blood glucose control. A strong correlation between medication adherence and blood glucose control among patients with type 2 diabetes mellitus ($p\text{-value} = 0.000$, $r = 0.492$) (Rismawan, Handayani, & Rahayuni, 2023). A significant relationship between adherence level and blood glucose in patients with type 2 DM (Bulu, Wahyuni, & Sutriningsih, 2019). Dietary adherence significantly correlates with blood glucose control in diabetic patients. There were 3.557 inpatient cases and 1.941 outpatient cases of DM. Additionally, 545 patients with diabetes died during this period. A preliminary study conducted at RSUD Dr. H. Abdul Moeloek in November 2024 involved unstructured interviews with 10 diabetic outpatients at the hospital's clinic. The results showed that 3 respondents (30%) sometimes forgot to take their medication because they felt no symptoms. Some mentioned that their blood glucose was sometimes high, but they were unsure whether it was due to missing medication or diet lapses. They had tried using alarms but still missed doses. 5 respondents (50%) stated that maintaining their diet was difficult, especially during family gatherings or when favorite foods were available. They struggled to be disciplined in both diet and medication because they saw no noticeable improvement. 2 respondents (20%) expressed that their blood glucose was more stable when they adhered to medication and diet, and they felt weaker and thirstier when they did not follow the prescribed treatment.

RESEARCH METHOD

This study is a qualitative research using an analytical survey method. The research design is analytical with a cross-sectional approach.

Fragestha Erwan, Andoko*, Triyoso, Dennti Kurniasih

Fakultas Ilmu Kesehatan, Universitas Malahayati
Corresponding author: *E-mail: andoko2013@gmail.com

Doi: 10.56922/mhc.v4i4.1367

The study has obtained ethical approval from the Health Research Ethics Committee of District Hospital Dr. H. Abdul Moeloek with ethical clearance number 519KEPK-RSUDAM/V/2025 dated May 15, 2025. The research was conducted at District Hospital Dr. H. Abdul Moeloek. The population of this study consisted of type 2 diabetes mellitus patients registered or treated at District Hospital Dr. H. Abdul Moeloek, averaging 229 patients per month, including both inpatient and outpatient cases. The sample size was 146 respondents, selected using a non-probability purposive sampling technique. Data were collected using the MMAS-8 (Morisky Medication Adherence Scale) questionnaire to measure medication adherence.

The MMAS-8 anxiety questionnaire consists of 10 statement items, which include: one statement related to taking medication on schedule, one statement regarding taking medication when blood sugar levels are low, one statement concerning discontinuing treatment, one statement about following the doctor's instructions for taking medication, one statement related to difficulty understanding healthcare providers' instructions regarding treatment, one statement about altering

diabetes medication dosage, one statement regarding medication side effects, one statement about adherence to treatment, one statement concerning substituting diabetes medication with herbal remedies, and one statement about taking medication due to difficulties in obtaining it. The questionnaire uses a Likert scale with YES/NO answer choices: 0 = low adherence, 1 = high adherence. The Morisky Medication Adherence Scale (MMAS-8) is a standardized instrument whose validity has been tested on 30 patients who were willing to complete the questionnaire. Construct validity testing was conducted using the Pearson product-moment correlation technique between the score of each item and the total score. Based on the analysis results, the Corrected Item-Total Correlation values for all items ranged from 0.423 to 0.897, all of which exceeded the r-table value at a 5% significance level, thus indicating that all items are valid. Reliability testing was conducted using the Cronbach's Alpha method. The result showed a Cronbach's Alpha value of 0.918, which falls into the very high category. Therefore, the instrument used in this study is considered reliable and appropriate for measuring the studied variable.

RESEARCH RESULTS

Tabel Characteristics of Respondent (N= 146)

Variabel	Results	p-value	OR
Age (Mean±SD)(Range)(Year)(n/%)	(54.5±7.8)(22-70)		
22 – 35	3/2.1		
36 – 45	9/6.2		
46 – 55	66/45.2		
56 – 65	61/41.8		
>65	7/4.8		
Gender (n/%)			
Male	75/51.4		
Female	71/48.6		
Education (n/%)			
University	28/19.2		
Elementary School	6/4.1		
Senior High School	56/38.4		
Junior High School	56/38.4		

Fragestha Erwan, Andoko*, Triyoso, Dennti Kurniasih

Fakultas Ilmu Kesehatan, Universitas Malahayati
Corresponding author: *E-mail: andoko2013@gmail.com

Doi: 10.56922/mhc.v4i4.1367

Occupation (n/%)			
Housewife	68/46.6		
Employed	78/53.4		
Medication Adherence (n/%)			
Low Adherence	57/39.0	<0.001	4.1 (2.0-8.5)
High Adherence	89/61.0		

Based on the characteristics of the respondents in this study, the average age was 54.5 ± 7.8 years with a range of 22–70 years, with the majority in the 46–55 age group (45.2%) and the 56–65 age group (41.8%). Most respondents had completed senior high school (38.4%) and junior high school (38.4%), while 19.2% had a university education. In terms of occupation, the majority were employed (53.4%), while the remaining 46.6% were housewives. The gender distribution was relatively balanced, with males accounting for 51.4% and females for 48.6%. Regarding medication adherence, most respondents demonstrated high adherence (61.0%) compared to low adherence (39.0%).

The results of the study showed a relationship between medication adherence and blood glucose levels in Type 2 Diabetes Mellitus patients. Statistical tests showed a p value <0.001 , which is smaller than $\alpha = 0.05$ (H_a is accepted and H_o is rejected). Thus, it can be concluded that there is a significant relationship between medication adherence and blood glucose levels in Type 2 Diabetes Mellitus patients. The odds ratio (OR) of 4.1 means that respondents with low adherence have a 4.1 times higher risk of experiencing increased blood glucose levels compared to respondents who are compliant with medication.

DISCUSSION

Based on the study results, the majority of respondents were aged between 46 and 55 years, totaling 66 individuals (45.2%). This age group falls under the middle adulthood category, is a productive age group that often experiences various lifestyle changes and increasing health awareness. Individuals in this age range typically begin to pay more attention to their health as chronic health complaints such as diabetes mellitus, hypertension, and other metabolic disorders start to emerge. Age is one of the factors influencing health behavior. As

a person ages, cognitive maturity and responsibility towards self-care tend to increase, including in managing chronic diseases (Mandpe, Pandit, Dawane, & Patel, 2024). Medication adherence in diabetic patients tends to be higher in those aged 45 years and above compared to younger age groups (Pascal, Ofoedu, Uchenna, Nkwa, & Uchamma, 2022). A significant association between age and medication adherence among patients with chronic diseases. According to the researcher's perspective, middle adulthood has the potential to be a supportive factor in enhancing medication adherence because individuals in this age group generally recognize the importance of maintaining health to preserve quality of life. However, with increasing age, challenges such as memory decline, vision impairment, or other comorbidities may also arise. Therefore, individualized approaches are crucial to ensure that health interventions remain effective, especially for elderly patients who may face cognitive and physical limitations (Shrestha, Shakya, Karmacharya, & Thapa, 2023).

Most respondents in this study had a secondary education level, with 56 individuals (38.4%) being high school graduates. Formal education influences the level of understanding of health information, including the importance of regular medication adherence in managing type 2 diabetes mellitus. Education is also an important indicator in the acceptance and absorption of health information from medical professionals. This study is consistent with Green's theory in the PRECEDE-PROCEED model, which identifies education level as a predisposing factor affecting health behavior. Individuals with higher education tend to have better access to health information and are more capable of understanding and assessing the risks associated with unhealthy behaviors. A strong correlation between education level and medication adherence

Fragestha Erwan, Andoko*, Triyoso, Dennti Kurniasih

Fakultas Ilmu Kesehatan, Universitas Malahayati
Corresponding author: *E-mail: andoko2013@gmail.com

Doi: 10.56922/mhc.v4i4.1367

in diabetic patients, with those having secondary or higher education showing better adherence than those with lower education levels. From the researcher's perspective, although most respondents had a secondary education level, this is sufficient to serve as a foundation for understanding health information. However, tailored educational approaches according to educational background are still necessary. Health workers should use language that is easy to understand and contextual. Visual education or the use of image-based media can also help improve comprehension, especially for patients with limited health literacy (McPherson, Smith, Powers, & Zuckerman, 2018).

The study found that the majority of respondents were employed, accounting for 78 individuals (53.4%). Employment status reflects economic independence and better access to healthcare services. On the other hand, work-related busyness can be a barrier to consistently adhering to medication regimens, including daily medication intake. According to the Health Belief Model (HBM), situational factors such as time constraints and work environment can influence an individual's health behaviors, including decisions about following medical treatments. Individuals working full-time tend to have lower medication adherence compared to those who are not employed, due to time limitations, fatigue, or work-related stress (Ripsin, Kang, & Urban, 2019). Employment can also be a supportive factor if the income earned is used to facilitate regular healthcare visits and treatment. From the researcher's viewpoint, employment is an ambivalent factor in medication adherence. On one hand, income from work provides financial ability to purchase medications, afford transportation to healthcare facilities, and support patient nutrition. On the other hand, a demanding work schedule, lack of flexible time, and work stress can reduce focus on medication adherence. Therefore, it is important for healthcare providers to offer flexible education and consider patients' work schedules, such as through brief counseling during routine check-ups or educational media accessible during patients' free time (Hidayati, Fatimah, & Iskandar, 2025).

Based on the research findings, 57 respondents (39.0%) had low adherence to medication, while 89

respondents (61.0%) showed high adherence. Medication adherence as the extent to which a patient willingly follows the instructions, rules, or medical recommendations provided by a doctor or other healthcare professional to support their recovery process. This study is also consistent with previous research. Fewer than half (47.3%) of type 2 diabetes mellitus patients adhered to their medication regimen. 54.8% of patients were non-adherent to dietary recommendations. Most patients with diabetes mellitus demonstrated high levels of medication adherence, with 47.4% classified as adherent. According to the present study, the level of medication adherence among patients with type 2 diabetes mellitus was generally high. However, forgetfulness remains a major barrier. Suggested solutions include the use of reminder tools (such as phone alarms or labeled pillboxes), increased family involvement to support medication routines, and patient self-training in managing medication schedules. Healthcare professionals must also improve one-on-one communication and education, particularly for patients at high risk of non-adherence due to age or social conditions (Lestari, Aini, & Wulandari, 2018).

From the researcher's perspective, the high adherence shown by 89 respondents reflects a positive level of awareness and motivation among most patients in managing their diabetes. Several factors may contribute to this, including patient knowledge, family support, the active role of healthcare workers in education, and consistent follow-up visits to health facilities. Nevertheless, the presence of 57 respondents with low adherence indicates that a portion of patients still requires more attention. This suggests that although the majority are adherent, the adherence rate is not yet optimal, highlighting the need for improved interventions. Through strengthened education and support systems, it is hoped that adherence will continue to improve, allowing for better blood glucose control and a reduced risk of complications. The study revealed that among the 146 respondents, 75 experienced high blood glucose levels, while 71 had low blood glucose levels. This finding aligns with the theory of insulin resistance and beta-cell dysfunction, which contributes to hyperglycemia and prediabetes. The theoretical framework explores how various

Fragestha Erwan, Andoko*, Triyoso, Dennti Kurniasih

Fakultas Ilmu Kesehatan, Universitas Malahayati
Corresponding author: *E-mail: andoko2013@gmail.com

Doi: 10.56922/mhc.v4i4.1367

factors affect medication adherence in the pharmacological treatment of type 2 diabetes mellitus (DM), and how this adherence impacts blood glucose control. Diabetes mellitus is a metabolic disorder caused by multiple factors, characterized by chronic hyperglycemia due to disruptions in the metabolism of carbohydrates, fats, and proteins. In managing type 2 DM, multiple strategies are employed, including education, dietary regulation, physical activity, and pharmacological treatment. Pharmacological therapy involves the use of oral hypoglycemic agents (OHA), such as sulfonylureas, biguanides, thiazolidinediones, and alpha-glucosidase inhibitors (Broadbent, Donkin, & Stroh, 2021).

Patient adherence to pharmacological therapy plays a crucial role in diabetes management. Adherence is influenced by multiple factors, including understanding of instructions, quality of social interactions and family support, as well as self-efficacy, attitudes, and patient personality. These factors determine the extent to which. The statistical results yielded a p-value < 0.001, which is less than $\alpha = 0.05$ (H_a accepted, H_o rejected). Therefore, it can be concluded that there is a significant association between medication adherence and blood glucose levels among patients with Type 2 Diabetes Mellitus. Patient adherence to pharmacological treatment is crucial in managing diabetes. Adherence is influenced by several factors, including comprehension of instructions, quality of social interactions and family support, self-efficacy, patient attitudes, and personality. These psychosocial determinants directly impact the consistency with which patients follow prescribed treatments. Factors influencing blood glucose levels include medication adherence, dietary habits, physical activity, stress, infections, and concomitant medications that may raise blood glucose. Continuously uncontrolled blood glucose significantly increases the risk of both microvascular and macrovascular complications. Hence, medication adherence plays a vital role in maintaining stable glucose levels. Patients who consistently and correctly take their prescribed medications tend to achieve better glucose control compared to non-adherent patients. Therefore, ongoing educational and support strategies are essential to enhance

patient understanding and adherence to optimal diabetes therapy (Kusumaningrum & Azinar, 2021).

A significant relationship between dietary adherence and blood glucose levels (Chi-square test, $p = 0.000$) among DM patients at Posbindu within the Sukamerindu Public Health Center, Bengkulu. From the researcher's perspective, low adherence combined with high blood glucose levels indicates suboptimal glucose control due to inconsistent pharmacological therapy. Non-adherence to medication schedules causes blood insulin levels to become unstable, impeding cellular metabolism of glucose and leading to hyperglycemia. Non-adherent patients often also neglect dietary and physical activity recommendations, exacerbating metabolic imbalance. Without proper dosage and schedule adherence, medication effectiveness diminishes, resulting in persistently high or increasing glucose levels. Low adherence is frequently associated with other unhealthy behaviors, such as poor diet and lack of exercise. Some respondents with low medication adherence still exhibited low blood glucose levels. This may be attributed to other compensatory factors such as relatively better diet habits, moderate physical activity, or partial effects of irregular medication use. Physiological factors like preserved pancreatic beta-cell function may also play a role—some patients maintain relatively effective endogenous insulin production. Thus, compensatory mechanisms and healthy lifestyle habits may help maintain glucose control despite low adherence (Annisaa, 2024).

Conversely, some respondents with high adherence had high blood glucose. This indicates that while medication adherence is important, it is not the sole determinant of glucose control. Even with strict adherence, if patients lack dietary regulation, physical activity, experience stress, or have long-standing disease (leading to diminished pancreatic function), blood glucose can remain elevated. Additionally, issues such as insulin resistance or inadequate medication dosage might contribute. Respondents with high adherence and low blood glucose demonstrate that pharmacological adherence contributes positively to lowering blood glucose. However, some of these patients remained in the prediabetic range—suggesting that even with

Fragestha Erwan, Andoko*, Triyoso, Dennti Kurniasih

Fakultas Ilmu Kesehatan, Universitas Malahayati
Corresponding author: *E-mail: andoko2013@gmail.com

Doi: 10.56922/mhc.v4i4.1367

high adherence, optimal glucose control may not yet be achieved. This is likely influenced by factors such as imperfect dietary habits, insufficient physical activity, or emerging diabetic complications. Medication adherence remains a cornerstone of effective diabetes management, particularly when integrated with healthy lifestyle practices. Patients with lifestyle adherence—such as balanced diet, regular exercise, and compliance with medical advice—are more likely to maintain better glucose control. Additionally, those with shorter duration of disease or without complications are usually better able to reach near-normal glucose levels (Jannoo & Khan, 2019).

CONCLUSION

A significant relationship between medication adherence and blood glucose levels in patients with Type 2 Diabetes Mellitus. The statistical test showed a p-value <0.001 with an odds ratio (OR) of 4.1, meaning that respondents with low adherence were 4.1 times more likely to have high blood glucose levels compared to those who adhered to their medication regimen.

REFERENCES

- Annisaa, N. (2024). *Gambaran Tingkat Kepatuhan Diabetes Self Management pada Penderita Diabetes Melitus Tipe II di Rumah Sakit Tadjuddin Chalid Kota Makassar* (Doctoral dissertation, Universitas Hasanuddin).
- Broadbent, E., Donkin, L., & Stroh, J. C. (2021). Illness and treatment perceptions are associated with adherence to medications, diet, and exercise in diabetic patients. *Diabetes care*, 34(2), 338-340.
- Bulu, A., Wahyuni, T. D., & Sutriningsih, A. (2019). Hubungan antara tingkat kepatuhan minum obat dengan kadar gula darah pada pasien diabetes melitus tipe ii. *Nursing News: Jurnal Ilmiah Keperawatan*, 4(1).
- Gonder-Frederick, L., Cox, D. J., Pohl, S. L., & Carter, W. (2024). Patient blood glucose monitoring: Use, accuracy, adherence, and impact. *Behavioral Medicine Update*, 6(1), 12-16.
- Hidayati, T. I. T. I. E. K., Fatimah, S. N., & Iskandar, S. H. E. L. L. Y. (2025). Normal fasting blood sugar levels and medication adherence improve the quality of life of type 2 diabetes mellitus patients in primary health facilities. *Asian J Pharm Clin Res*, 11, 472-77.
- Jannoo, Z., & Khan, N. M. (2019). Medication adherence and diabetes self-care activities among patients with type 2 diabetes mellitus. *Value in health regional issues*, 18, 30-35.
- Kusaeri, S. K. M., Nuâ, N., & Ardian, I. (2020). Promosi Kesehatan Dengan Metode Focus Group Discussion Dapat Mempengaruhi Pengetahuan Tentang Diabetes Melitus. *Bima Nursing Journal*, 1(2), 113-118.
- Kusumaningrum, A., & Azinar, M. (2021). Faktor kejadian anemia pada ibu hamil. *Higeia Journal of Public Health Research and Development*, 5(3), 227-238.
- Lestari, E. S., Aini, D. N., & Wulandari, P. (2018). Hubungan Kepatuhan Diet Dengan Kadar Gula Darah Sewaktu Pada Pasien Diabetes Mellitus Tipe 2 Diruang Anggrek Rsud Tugurejo Semarang. *Jurnal Ners Widya Husada*, 2(1).
- Mandpe, A. S., Pandit, V. A., Dawane, J. S., & Patel, H. R. (2024). Correlation of Disease Knowledge with Adherence to Drug Therapy, Blood Sugar Levels and Complications Associated with Disease among Type 2 Diabetic Patients. *J Diabetes Metab* 5: 369. doi: 10.4172/2155-6156.1000369 Page 2 of 5 *J Diabetes Metab* ISSN: 2155-6156 JDM, an open access journal Volume 5• Issue 5• 1000369. age ($p < 0.127$) and gender ($P < 0.385$) of patient with medication adherence (Table 1). Variables Freq fluency n Adequa te knowle dge n Inadequ, 3.

Fragestha Erwan, Andoko*, Triyoso, Dennti Kurniasih

Fakultas Ilmu Kesehatan, Universitas Malahayati
Corresponding author: *E-mail: andoko2013@gmail.com

Doi: 10.56922/mhc.v4i4.1367

- McPherson, M. L., Smith, S. W., Powers, A., & Zuckerman, I. H. (2018). Association between diabetes patients' knowledge about medications and their blood glucose control. *Research in Social and Administrative Pharmacy*, 4(1), 37-45.
- Moreland, E. C., Volkening, L. K., Lawlor, M. T., Chalmers, K. A., Anderson, B. J., & Laffel, L. M. (2016). Use of a blood glucose monitoring manual to enhance monitoring adherence in adults with diabetes: a randomized controlled trial. *Archives of Internal Medicine*, 166(6), 689-695.
- Murdiqi, S. K. (2020). *Pengaruh Promosi Kesehatan Dengan Metode Focus Group Discussion Terhadap Pengetahuan Masyarakat Tentang Diabetes Melitus Di Puskesmas Bangetayu Semarang* (Doctoral dissertation, Universitas Islam Sultan Agung Semarang).
- Pascal, I. G., Ofoedu, J. N., Uchenna, N. P., Nkwa, A. A., & Uchamma, G. U. E. (2022). Blood glucose control and medication adherence among adult type 2 diabetic Nigerians attending a primary care clinic in under-resourced environment of eastern Nigeria. *North American Journal of Medical Sciences*, 4(7), 310.
- Rahman, R. (2018). Gambaran hasil pemeriksaan HbA1C pada penderita diabetes melitus tipe II di RSUD Labuang Baji Makassar. *Jurnal Media Analis Kesehatan*, 9(2), 149-155.
- Ripsin, C. M., Kang, H., & Urban, R. J. (2019). Management of blood glucose in type 2 diabetes mellitus. *American family physician*, 79(1), 29-36.
- Rismawan, M., Handayani, N. M. T., & Rahayuni, I. G. R. (2023). Hubungan Kepatuhan Minum Obat Terhadap Kadar Gula Darah Sewaktu Pada Penderita Diabetes Mellitus Tipe 2. *Jurnal Riset Media Keperawatan*, 6(1), 23-30.
- Saputri, R. D. (2020). Komplikasi sistemik pada pasien diabetes melitus tipe 2. *Jurnal Ilmiah Kesehatan Sandi Husada*, 9(1), 230-236.
- Shrestha, S. S., Shakya, R., Karmacharya, B. M., & Thapa, P. (2023). Medication adherence to oral hypoglycemic agents among type II diabetic patients and their clinical outcomes with special reference to fasting blood glucose and glycosylated hemoglobin levels. *Kathmandu university medical journal*, 11(3), 226-232.
- Virdi, N., Daskiran, M., Nigam, S., Kozma, C., & Raja, P. (2022). The association of self-monitoring of blood glucose use with medication adherence and glycemic control in patients with type 2 diabetes initiating non-insulin treatment. *Diabetes technology & therapeutics*, 14(9), 790-798.

Fragestha Erwan, Andoko*, Triyoso, Dennti Kurniasih

Fakultas Ilmu Kesehatan, Universitas Malahayati
Corresponding author: *E-mail: andoko2013@gmail.com

Doi: 10.56922/mhc.v4i4.1367