

THE RELATIONSHIP BETWEEN DIET ADHERENCE AND BLOOD SUGAR LEVELS IN PATIENTS WITH DIABETES MELLITUS AT UPTD DLANGGU HEALTH CENTER, MOJOKERTO REGENCY

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ABSTRACT

Diabetes Mellitus (DM) is a chronic disease characterized by an increase in blood glucose levels due to impaired insulin secretion or work. Dietary adherence is one of the important factors in controlling blood sugar levels in DM patients. This study aims to analyze the relationship between dietary adherence and blood sugar levels in Diabetes Mellitus patients at the Dlanggu Health Center UPTD, Mojokerto Regency. The study used a correlational analytical design with a *cross sectional* approach. The population was 434 patients, with a sample of 82 respondents selected using *consecutive sampling* techniques. Dietary adherence was measured using the *Perceived Dietary Adherence Questionnaire* (PDAQ) questionnaire, while blood sugar levels were obtained through Blood Sugar During (GDS) examination. The analysis used the Spearman's Rho test ($\alpha = 0.05$). The results showed that 63.4% of respondents did not adhere to the diet and 57.3% had high blood sugar levels. The Spearman's Rho test showed $p = 0.036$ and $r = -0.233$, so there was a significant association with the strength of a weak correlation between diet adherence and blood sugar levels in patients with Diabetes Mellitus.

Keywords: *Diabetes Mellitus, Dietary Adherence, Blood Sugar Levels*

INTRODUCTION

Instability in blood sugar levels is a sign of impaired glucose metabolism in people with diabetes mellitus (DM). This condition can lead to an increase in blood glucose levels (hyperglycemia) or a decrease in blood glucose levels (hypoglycemia) due to a disturbance in the production or work of the hormone insulin (Rosares, et al., 2022). One of the main factors that affect the stability of blood sugar levels is the patient's adherence to a predetermined diet program. Dietary adherence is essential in the management of diabetes mellitus because food intake directly affects changes in blood glucose levels. When a person does not adhere to a diet program, blood glucose levels become difficult to control, increasing the risk of long-term complications such as nephropathy, retinopathy, and diabetic neuropathy (Elsayed, et al., 2023). People with diabetes mellitus who do not adhere to a diet are at risk of complications, both acute and chronic, if their blood sugar levels are not properly controlled (Vena, et al., 2022).

International Diabetes Federation (IDF) says that worldwide, there were about 537 million adults suffering from diabetes mellitus in 2021, and this figure is expected to increase to 643 million by 2030 (*The Diabetes Atlas*, 2021). According to data from the Basic Health Research (Riskesdas) in 2018, the prevalence of Diabetes Mellitus in Indonesians over 15 years old reached 2%, a significant increase from 1.5% in 2013 (Ministry of Health of the Republic of Indonesia, 2018). East Java itself is one of the provinces with a high burden of Diabetes Mellitus, with a prevalence of 2.6% (Riskesdas, 2018). Data for 2022 from the Mojokerto Regency Health Office shows that DM is included in ten non-communicable diseases with an increasing number of cases. Research results (Rahmatiah, et al., 2022) at the

Internal Medicine Clinic of Abdoel Wahab Sjahranie Hospital in Samarinda showed that most of Diabetes Mellitus patients did not comply with the diet, which was as much as 65.2%. The study also found that 78.3% of patients had uncontrolled fasting blood glucose levels. In addition, diet-adherent patients had a 14-fold greater risk of experiencing uncontrolled blood glucose levels than diet-adherent patients (OR = 14,000; $p = 0.033$). The results of this study show that dietary adherence has an important role in controlling blood sugar levels in patients with Diabetes Mellitus.

Diabetes Mellitus (DM) is a chronic metabolic disease characterized by increased blood sugar levels due to impaired production or work of the hormone insulin. Age, family history, obesity, lack of physical activity, and an unhealthy diet are some of the factors that can cause Diabetes Mellitus. Dietary adherence is one of the main pillars in the management of Diabetes Mellitus which includes the patient's ability to consistently follow dietary arrangements as recommended by health professionals, including adhering to the 3J principle of the right amount, type, and meal schedule (Suhartatik, 2022). Non-adherence to diet can lead to uncontrolled fluctuations in blood glucose levels, increasing the risk of long-term complications such as nephropathy, retinopathy, and diabetic neuropathy (Elsayed, et al., 2023).

Dietary adherence is one of the main pillars in the management of Diabetes Mellitus which includes the patient's ability to consistently follow dietary arrangements as recommended by health professionals, including adhering to the 3J principle of the right amount, type, and meal schedule (Suhartatik, 2022). Non-adherence to the diet can lead to uncontrolled fluctuations in blood glucose levels, increasing the risk of long-term complications such as nephropathy, retinopathy, and diabetic neuropathy (Elsayed, et al., 2023). As a result of non-adherence to the diet, the body's glucose metabolism becomes disrupted so that blood sugar levels become unstable. This condition can cause an increase in blood sugar levels (hyperglycemia) if the patient does not adhere to the diet or eats foods with a poor diet, or a decrease in blood sugar levels (hypoglycemia) due to delayed meals, the use of diabetes medications, or excessive physical activity (Weningtyas, et al., 2025). Over a long period of time, uncontrolled blood sugar levels can have many health effects. Heart disease, stroke, kidney damage, nerve damage, as well as vision impairment that can cause blindness are some of the effects that can occur. In addition, this condition can reduce the quality of life of people suffering from diabetes mellitus (Sun et al., 2022).

METHODS

This study uses a quantitative research design with a correlative descriptive approach and a cross-sectional design, namely the measurement of independent variables (dietary adherence) and dependent variables (blood sugar levels) at the same time (Nursalam, 2020).

The study population is all Diabetes Mellitus patients who are treated at the Poly UPTD Puskesmas Dlanggu Mojokerto in the January-March 2026 period, which is 434 patients (Zainuddin, & Aditya, W., 2023). The sample size was determined using the Slovin formula with an error rate of 10%, so that a sample of 82 respondents was obtained which was selected through the non-probability sampling technique with the consecutive sampling method, where each patient who met the inclusion criteria was taken sequentially until the number of samples was met (Amin, et al., 2023).

Dietary adherence was measured using a questionnaire *Perceived Dietary Adherence Questionnaire* (PDAQ) consisting of 9 statement items with a Likert scale of 7 points; Scores of 33–63 were categorized as compliant and scores <33 were categorized as non-compliant. This questionnaire has been tested to be valid and reliable with a range of r calculation of 0.322–0.534 and a value of *Cronbach's Alpha* >0.6 (Asaad, et al., 2015). Blood sugar levels were obtained from the results of the Blood Sugar During (GDS) examination using a digital glucometer, which was categorized as low (<70 mg/dL), normal (70–179 mg/dL), and high ($\geq$ 180 mg/dL) based on classification PERKENI (2021). Data collection was carried out after respondents signed an informed consent sheet, followed by filling out the PDAQ questionnaire and checking the GDS on the day of the public poly service at the Dlanggu Health Center UPTD, Mojokerto Regency, East Java.

Data were analyzed univariately to describe the frequency distribution of each variable, and bivariously using *the Spearman's Rho correlation test* with a significance level of $\alpha = 0.05$ to test the relationship between dietary adherence and blood sugar levels. This research has obtained ethical approval through the Health Research Ethics Committee of LPPM Bina Sehat University PPNI with Number 238/KEP/UBS-PPNI/VII/2026.

FINDINGS AND DISCUSSION

RESEARCH RESULTS

This study was carried out on 82 respondents of Diabetes Mellitus patients at the UPTD Dlanggu Health Center, Mojokerto Regency who met the inclusion and exclusion criteria.

Table 1: Distribution of Respondent Frequency by Age, Gender, Education Level, Employment Status, and Length of Suffering from Diabetes Mellitus

Yes	General Data	Frequency	Present (%)
1	Respondent Age		
	18 -19 Years	0	0
	20-44 Years	17	20,7
	45-59 Years	39	47,6
	> 60 Years	26	31,7
2	Gender		
	Male	22	26,8
	Women	60	73,2
3	Education Level		
	No School	7	8,5
	SD	24	29,3
	Junior High School	21	25,6
	High School/Vocational School	24	29,3
	College	6	7,3
4	Employment Status		
	Work	22	26,8
	Not Working	60	73,2

5	Long Suffering from DM		
	3-12 Months	14	17,1
	≤5 Years	40	48,8
	> 5 Years	28	34,1
	Total	82	100,0

Source: Primary Data 2026

Table 1 shows that most of the respondents are aged 45–59 years (47.6%), female (73.2%), educated in elementary and high school/vocational school (29.3% respectively), unemployed (73.2%), and have suffered from Diabetes Mellitus for ≤5 years (48.8%).

Table 2. Distribution of Respondent Frequency Based on Dietary Adherence in Patients with Diabetes Mellitus at UPTD Dlanggu Health Center

Yes	Diet Adhesion	Frequency (n)	Percentage (%)
1	Obedient	30	36,6
2	Non-compliant	52	63,4
	Total	82	100,0

Source: Primary Data 2026

Table 2 shows that most of the respondents did not comply with the diet, which was as many as 52 respondents (63.4%).

Table 3. Distribution of Respondent Frequency Based on Blood Sugar Level in Patients with Diabetes Mellitus at UPTD Dlanggu Health Center

Yes	Blood Sugar Levels	Frequency (n)	Percentage (%)
1	Low (≤ 70 mg/dl)	0	0
2	Normal (70-179 mg/dL)	35	42,7
3	High (≥ 180 mg/dL)	47	57,3
	Total	82	100

Source: Primary Data 2026

Table 3 shows that most of the respondents had blood sugar levels in the high category (≥ 180 mg/dL), which was as many as 47 respondents (57.3%).

Table 4. Cross-Tabulation of Dietary Compliance with Blood Sugar Levels in Patients with Diabetes Mellitus at UPTD Dlanggu Health Center

Diet Adherence	Blood Sugar Levels During							
	Low		Normal		Height		Total	
	F	%	F	%	F	%	F	%
Obedient	0	0	16	53,3	14	46,7	30	100
Non-compliant	0	0	19	36,5	33	63,5	52	100
Total	0	0	35	42,7	47	57,3	82	100

Primary data source 2026 *Spearman Rank Test*: $p = 0.036$; $r = -0.233$

Table 4 shows that of the 52 respondents who did not adhere to the diet, as many as 33 respondents (63.5%) had high blood sugar levels, while of the 30 respondents who adhered to the diet, as many as 16 respondents (53.3%) had normal blood sugar levels. The

results of the *Spearman's Rho test* obtained a value of $p = 0.036$ ($p < 0.05$) and $r = -0.233$, which shows that there is a significant relationship between dietary adherence and blood sugar levels in patients with Diabetes Mellitus.

DISCUSSION

1. Diet With Blood Sugar Levels

The results showed that most of the respondents did not comply with the diet, namely 52 respondents (63.4%), while 30 respondents (36.6%) were classified as compliant with the recommended diet. Compliance (*Compliance or Compliance*) is an important part of disease management. Adherence to a Diabetes Mellitus treatment regimen, including blood sugar monitoring, diet, exercise, and medication, is significantly associated with glycemic control and lifestyle changes according to the doctor's advice (Yulianti, T., & Anggraini, 2020).

Non-compliance is defined as the behavior of a person or caregiver who does not comply with a health promotion or therapeutic plan that has been agreed upon by an individual, family, community, and medical professional. This behavior can lead to clinical outcomes or partially ineffective outcomes (Wilkinson, 2012). Dietary non-adherence in Diabetes Mellitus patients can be influenced by various factors, including knowledge, education, occupation, family support, motivation, age, and gender. These factors can affect a patient's ability and willingness to follow dietary recommendations, but the influence of each factor can be different for each individual or study population. (Suhartatik, 2022).

The number of respondents who did not adhere to the diet showed that knowledge of the diet and the patient's ability to apply the recommendations regularly in daily life were important factors in managing diabetes mellitus. Several factors, such as long-standing eating habits, lack of motivation, lack of family support, and daily activities, can make it difficult to follow the recommended diet. Some patients have realized the importance of dietary regulation. This condition makes it difficult for patients to stick to their diet in the long term.

Based on the results of the study, non-compliance is fairly evenly distributed across all age groups, but the proportion is highest in the 45–59 age group. Of the 39 respondents in this group, 24 people (61.5%) were non-compliant and only 15 people (38.5%) were compliant. In the 20–44 year group, out of 17 respondents, 11 people (64.7%) were non-compliant and 6 people (35.3%) were compliant. In the >60 year old group, out of 26 respondents, 17 people (65.4%) were non-compliant and 9 people (34.6%) were compliant. Proportionally, all three age groups had relatively similar levels of non-compliance (34.6%–38.5% compliance), with no marked differences between groups.

Dietary non-adherence was found in all age groups, but the highest proportion was found in the 45–59 age group. This condition shows that age is one of the factors that can affect dietary adherence in Diabetes Mellitus patients. Each age group has different characteristics and challenges in carrying out disease management. At older age, there are physiological changes, decreased organ function, cognitive ability, and memory that can affect the patient's ability to understand and apply dietary recommendations consistently. Meanwhile, at younger ages, dietary adherence is often affected by heavy activities, busy work, and lifestyle, so patients tend to be less disciplined in managing schedules, types,

and amounts of food. Thus, differences in characteristics in each age group can affect the level of dietary adherence in Diabetes Mellitus patients (Pramudyatama, et al., 2025).

The high level of dietary non-compliance in all age groups suggests that dietary adherence in Diabetes Mellitus patients is not only influenced by age, but also by other factors such as knowledge, motivation, and family support. In the age group of 20–44 years, non-compliance can be influenced by busy work, social activities, and lifestyle so that patients are less disciplined in implementing schedules, types, and amounts of food as recommended. In the 45–59 age group, the demands of work and the boredom of long-term treatment can cause patients to begin to neglect dietary arrangements. Meanwhile, in the age group of >60 years, non-compliance can be influenced by a decrease in physical condition, memory, and comorbidities that make it difficult for patients to implement a consistent diet. Therefore, education about dietary adherence needs to be provided to all age groups with an approach tailored to the characteristics of each patient.

Based on the results of the study, it is known that dietary adherence is also influenced by gender factors. There is a fairly clear difference. Of the 60 female respondents, 24 people (40.0%) were compliant and 36 people (60.0%) were non-compliant. Meanwhile, of the 22 male respondents, only 6 people (27.3%) were compliant and 16 people (72.7%) were non-compliant. This means that the proportion of compliance in women is higher than in men.

Dietary adherence in patients with Diabetes Mellitus tended to be higher in women (40.0%) than in men (27.3%). In theory, gender is one of the factors that can affect health behaviors, including adherence to medication and diet. Women generally have a higher awareness of their health conditions, use health services more often, and are more willing to follow the recommendations of health workers than men (ADA, 2023). However, in this study, most of the female respondents were still classified as non-compliant with the diet, this condition can be influenced by various factors, namely women often have a dual role as household managers as well as family caregivers, so that they prioritize the needs of family members over their own health needs. Being busy preparing food for all family members can also cause women to have difficulty providing a menu that is in accordance with the recommendations of the diabetic diet. In addition, psychological factors such as stress, anxiety, and fatigue due to the burden of daily responsibilities can reduce motivation in maintaining dietary adherence. Lack of family support, family eating habits, and difficulty changing long-established diets are also factors that can cause women to not adhere to a diabetic diet (Karlsson, et al., 2026). In contrast, men often have lower levels of compliance because they do more activities outside the home, have less regular eating habits, and eat more calories or ready-to-eat foods when working (Fauzia, et al., 2015).

Based on the results of the study, although women in this study had a higher percentage of dietary adherence than men, most of the female respondents were still classified as non-compliant. This suggests that dietary adherence is not only influenced by gender, but also by a variety of other factors related to individual and environmental conditions. Women who have a dual role in the family tend to prioritize the needs of family members rather than the management of the diseases they suffer, so the implementation of a diabetic diet is less optimal. On the other hand, men have lower levels of compliance which are suspected to be related to activities outside the home, irregular diets, and low

attention to information-seeking and health care behaviors. Therefore, improving dietary adherence in Diabetes Mellitus patients needs to consider the different characteristics and challenges in men and women, so that education and assistance can be provided more appropriately according to the needs of each patient.

Based on the results of the study, the highest level of dietary adherence was actually found in respondents with elementary education, namely as many as 12 out of 24 respondents (50.0%) who were compliant. Furthermore, dietary adherence in respondents with junior high school education was 42.9% (9 out of 21 respondents), higher education was 33.3% (2 out of 6 respondents), high school was 25.0% (6 out of 24 respondents), while the lowest adherence was found in respondents who did not graduate from elementary school, which was 14.3% (1 out of 7 respondents). These results show that there is no pattern of increasing dietary adherence in line with higher education levels.

Education level is one of the factors that can affect dietary adherence in Diabetes Mellitus patients. Education level is related to a person's ability to receive, understand, and process health information provided by health workers. The higher the level of education, the better a person's ability to understand the importance of dietary regulation, so it is expected to increase adherence in running the Diabetes Mellitus diet. (Fauzia, et al., 2015).

The results of the study show that the level of education can affect a person's ability to understand information about the management of Diabetes Mellitus, but it is not always directly proportional to dietary adherence. In this study, respondents with elementary education had a higher level of compliance compared to respondents with higher education. In addition, dietary adherence is also influenced by individual awareness, motivation to keep blood sugar levels under control, and family support in helping patients implement a diet that is in accordance with recommendations. Therefore, although education plays a role in improving the ability to receive health information, other factors also have a great contribution in shaping dietary adherence in Diabetes Mellitus patients.

Based on the results of the study, the level of dietary adherence in respondents who did not work was higher than in respondents who worked. Of the 60 respondents who did not work, as many as 24 respondents (40.0%) complied with the diet and 36 respondents (60.0%) did not comply. Meanwhile, of the 22 respondents who worked, only 6 respondents (27.3%) were compliant and 16 respondents (72.7%) were non-compliant. The results showed that working respondents had a higher proportion of dietary non-compliance than non-working respondents.

Work is one of the factors that can affect dietary adherence in Diabetes Mellitus patients. Dietary adherence is the patient's behavior in carrying out dietary recommendations that have been given by health workers, including regulating the amount of food, choosing the appropriate type of food, and the accuracy of the meal schedule (3J principle). Employment status can affect the patient's ability to implement the recommendations. Patients who work generally have higher activity and busyness so they can experience difficulties in setting a meal schedule, choosing healthy foods, and controlling the portion of meals as recommended. In contrast, patients who are not working tend to have more flexible time to prepare meals, manage meal times regularly, and more easily follow dietary recommendations. Thus, employment status can affect the level of dietary adherence in Diabetes Mellitus patients (Suhartatik, 2022).

Respondents who did not work had a higher proportion of dietary adherence than respondents who worked. This condition is likely caused by respondents who do not work having more flexible time to set a meal schedule, prepare meals as recommended, and more easily follow a predetermined diet pattern. On the other hand, respondents who work tend to have higher activities and busyness so that it can affect the regularity of meal times and food selection. However, work is not the only factor that affects dietary adherence, as adherence is also influenced by knowledge, motivation, and family support in helping patients carry out Diabetes Mellitus management consistently.

2. Blood Sugar Levels in Patients with Diabetes Mellitus

The results showed that most of the respondents had high blood sugar levels (≥ 180 mg/dL), namely 47 respondents (57.3%), while 35 respondents (42.7%) had blood sugar levels in the normal category (70–179 mg/dL).

Blood sugar levels are the amount of glucose present in the blood and are an important indicator in assessing the success of controlling Diabetes Mellitus. Blood sugar level monitoring (GDS) is used to determine blood glucose levels at the time of the examination without paying attention to the time of the last meal. In patients with Diabetes Mellitus, blood sugar levels are said to be normal if they are in the range of 70–179 mg/dL, while blood sugar levels ≥ 180 mg/dL indicate hyperglycemia. Hyperglycemia occurs due to impaired insulin secretion, insulin resistance, or a combination of both so that glucose cannot be utilized optimally by body cells and leads to an increase in glucose levels in the blood (PERKENI, 2021). Blood sugar levels are affected by various factors, both internal and external factors. These factors include work, which affects physical activity, diet, and stress levels; long suffering from Diabetes Mellitus, which is associated with a progressive decline in pancreatic function; dietary adherence, which plays a role in regulating the amount, type, and schedule of meals; physical activity, which increases insulin sensitivity; adherence to pharmacological therapy, as well as stress, which can increase the hormone cortisol and provoke an increase in blood sugar levels (Ekasari., & Devieka, R, 2022).

The high proportion of respondents who have high blood sugar levels shows that blood glucose control in Diabetes Mellitus patients is still not optimal. This condition may be influenced by various interrelated factors, such as poor dietary adherence, lack of physical activity, adherence to therapy, and respondent characteristics such as age, occupation, and length of time suffering from Diabetes Mellitus. Therefore, continuous education from health workers and family support is needed so that patients are able to implement a healthy lifestyle consistently so that blood sugar levels can be controlled and the risk of complications can be minimized.

Based on the results of the study, normal blood sugar levels were more commonly found in respondents who had just suffered from Diabetes Mellitus for 3–12 months. Of the 14 respondents in this group, as many as 9 respondents (64.3%) had normal blood sugar levels, while 5 respondents (35.7%) had high blood sugar levels. On the other hand, in respondents who have suffered from Diabetes Mellitus for 2–5 years, out of 40 respondents, 25 respondents (62.5%) had high blood sugar levels and 15 respondents (37.5%) had normal blood sugar levels. In the group that had suffered from Diabetes Mellitus for more than 5 years, out of 28 respondents, 17 respondents (60.7%) had high blood sugar levels and 11 respondents (39.3%) had normal blood sugar levels. These results show that respondents who have suffered from Diabetes Mellitus for 2–5 years or

more than 5 years tend to have a greater proportion of high blood sugar levels than respondents who have recently suffered from Diabetes Mellitus.

Long suffering from Diabetes Mellitus is one of the factors that can affect the control of blood sugar levels. The longer a person suffers from Diabetes Mellitus, the greater the risk of decreased pancreatic beta cell function and increased insulin resistance, making it more difficult to control blood glucose levels. In addition, a long course of the disease can increase the risk of complications and cause the effectiveness of treatment and management of Diabetes Mellitus to decrease if it is not accompanied by adherence to therapy and good lifestyle management. Therefore, the length of suffering from Diabetes Mellitus is related to the patient's ability to maintain blood sugar levels under control (Purwandari, et al., 2022).

Respondents who have just suffered from Diabetes Mellitus tend to have more controlled blood sugar levels because they still have high motivation to follow the recommendations of health workers. On the other hand, the longer a person suffers from Diabetes Mellitus, the more difficult it is to control blood sugar levels due to the development of the disease, decreased pancreatic function, and the possibility of decreased adherence in carrying out the management of Diabetes Mellitus. Therefore, education and continuous monitoring are needed so that blood sugar levels remain under control.

Based on the results of the study, most of the respondents, both working and non-working, had high blood sugar levels. In the group of respondents who worked, out of 22 respondents, 12 respondents (54.5%) had high blood sugar levels and 10 respondents (45.5%) had normal blood sugar levels. Meanwhile, in the group of respondents who did not work, out of 60 respondents, 35 respondents (58.3%) had high blood sugar levels and 25 respondents (41.7%) had normal blood sugar levels. These results show that the proportion of high blood sugar levels in the two groups is relatively almost the same, so that the employment status does not show a striking difference in blood sugar levels in this study.

Work is one of the factors that can affect blood sugar levels in Diabetes Mellitus patients. According to the theory in Chapter II, employment status can affect a person's lifestyle, including physical activity, diet, stress levels, and adherence to medication and diet. Patients who work generally have higher activity and work demands so they have the potential to have difficulty maintaining a diet and performing regular health controls. In contrast, patients who are not working tend to have more flexible time to manage their diet and undergo the management of Diabetes Mellitus. However, blood sugar levels are not only affected by employment status, but are also affected by other factors such as dietary adherence, physical activity, medication consumption, and the length of time you have been suffering from Diabetes Mellitus (Himawan, et al., 2023).

The results showed that employment status was not the main factor affecting blood sugar levels because the proportion of high blood sugar levels in the respondents who worked and did not work was relatively the same. This indicates that blood sugar level control is likely to be more influenced by other factors, such as dietary adherence, physical activity, medication consumption, and the length of time you have been suffering from Diabetes Mellitus.

3. The Relationship of Dietary Adherence to Blood Sugar Levels in Patients with Diabetes Mellitus

Based on the results of the study, of the 30 respondents who adhered to the diet, as many as 16 respondents (53.3%) had normal blood sugar levels and 14 respondents (46.7%) had high blood sugar levels. Meanwhile, of the 52 respondents who did not adhere to the diet, as many as 33 respondents (63.5%) had high blood sugar levels and 19 respondents (36.5%) had normal blood sugar levels. The results of the Spearman's rho statistical test showed a value of $p = 0.036$ ($p < 0.05$) with a correlation coefficient of $r = -0.233$, which means that H_1 is acceptable and there is a significant relationship between dietary adherence and blood sugar levels in patients with Diabetes Mellitus. A correlation coefficient value of -0.233 indicates a negative relationship with weak strength, which means that the better the patient's dietary adherence, the lower the blood sugar level, even if the relationship is not very strong.

The relationship between diet adherence and blood sugar levels in this study can be seen from most of the respondents who adhered to the diet had normal blood sugar levels, namely 16 responded (53.3%), while the other 14 respondents (46.7%) still had high blood sugar levels. On the other hand, of the respondents who did not adhere to the diet, most of the respondents, namely 33 respondents (63.5%) had high blood sugar levels, but there were still 19 respondents (36.5%) who had normal blood sugar levels. The 3J results (number, type, and schedule) were supported by adherence to regular treatment therapy and physical activity. On the other hand, respondents who have adhered to a diet but still have high blood sugar levels may be affected by other factors, such as adherence to treatment that is not optimal, lack of physical activity, long suffering from Diabetes Mellitus, and individual conditions or physiology. Respondents who do not adhere to the diet but have normal blood sugar levels are possible because they regularly take antidiabetic drugs, do regular physical activity, or because the test used is Blood Sugar During (GDS) which is affected by the time of the last meal and the use of antidiabetic drugs. This is in line with research that states that blood sugar level control is not only influenced by dietary adherence, but also by adherence to pharmacological therapy and physical activity (Mariana, et al., 2022).

This can be seen from the majority of respondents who adhere to the diet have normal blood sugar levels, which is as many as 16 respondents (53.3%), and most of the respondents who do not comply have high blood sugar levels, which is as many as 33 respondents (63.5%). However, there are still 14 respondents (46.7%) who have complied with the diet but have high blood sugar levels, and 19 respondents (36.5%) who are not compliant with the diet but have normal blood sugar levels. This condition shows that blood sugar level control is influenced by various other factors, such as adherence to taking antidiabetic drugs, physical activity, long suffering from Diabetes Mellitus, individual physiological conditions, as well as because the examination used is Blood Sugar During (GDS) which is influenced by the time of the last meal and the use of medication. Therefore, efforts to control blood sugar levels are not enough only by increasing dietary adherence, but also need to be balanced with adherence to pharmacological therapy, regular physical activity, continuous education, and regular monitoring of blood sugar levels so that diabetes control results are more optimal.

CONCLUSION

Based on the results of a study that has been conducted on 82 respondents of Diabetes Mellitus patients at the Dlanggu Health Center in Mojokerto Regency, it can be concluded that there is a significant relationship between dietary adherence and blood sugar levels in Diabetes Mellitus patients at the Dlanggu Health Center in Mojokerto Regency, as evidenced by the Spearman Rho Test where the p value is 0.036 ($p < 0.05$) and the correlation coefficient (rho) is -0.233. The results showed that dietary adherence was related to blood sugar levels in patients with Diabetes Mellitus, but the strength of the relationship obtained was relatively weak. This indicates that blood sugar levels are not only influenced by dietary adherence, but also by other factors such as medication adherence, physical activity, stress levels, length of suffering from Diabetes Mellitus, nutritional status, and family support. Therefore, controlling blood sugar levels requires a comprehensive approach by paying attention to these various factors.

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