

The Relationship of Knowledge and Attitude with Dietary Adherence in Patients with Diabetes Mellitus in the Working Area of Bissappu Health Center in 2025

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ABSTRACT

Article Info

Article History:

Received: 8 August 2025

Revised: 15 August 2025

Accepted: 30 December 2025

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DOI:

<https://doi.org/10.37362/ch.c.v9i3.624>

P- ISSN : [2722-1563](#)

E- ISSN : [2580-7137](#)



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Diabetes Mellitus (DM) is a chronic metabolic disease characterized by high blood glucose levels due to impaired insulin secretion, insulin action, or both. One of the important aspects of long-term management of diabetes mellitus is adherence to an appropriate diet. A proper diet can help keep blood sugar levels stable and prevent long-term complications. However, many people with diabetes mellitus do not have an adequate understanding of the importance of a proper diet. In the working area of the Bissappu Health Center, Bantaeng Regency, cases of diabetes mellitus continue to increase every year, while data on the level of dietary adherence of patients is still not systematically documented. Therefore, the patient's knowledge and attitude towards the diabetes mellitus diet is an important aspect that needs to be researched. This study aims to determine the relationship between knowledge and attitude and dietary adherence in patients with diabetes mellitus in the working area of the Bissappu Health Center, Bantaeng Regency. This type of research is descriptive correlation with *cross-sectional design*. The total sample of 47 respondents with diabetes mellitus was selected using *accidental sampling techniques*. Data is collected through a questionnaire that has been tested for validity. Data analysis using spearman correlation test. The results showed a significant relationship between knowledge and dietary adherence ($p = 0.001$; $r = 0.476$) and attitude with diet adherence ($p = 0.003$; $r = 0.418$). The majority of respondents showed a low level of knowledge, attitude, and dietary adherence. There was a meaningful relationship between knowledge and attitudes and dietary adherence in people with DM. It is recommended that health workers be more active in providing education and continuous interventions to increase patient awareness and compliance in carrying out the diet as recommended.

Keywords: Knowledge, Attitude, Diet Adherence, Diabetes Mellitus

INTRODUCTION

Diabetes is a chronic disease that occurs when the pancreas does not produce enough insulin or when the body cannot use the insulin produced effectively (WHO, 2022). Insulin is the main hormone involved in the regulation of blood glucose produced by pancreatic β cells. Insulin acts as a mediator of the entry of glucose through

membranes that bind to receptors in the body. When the body is unable to produce or use insulin optimally, adipose tissue releases glycogen stores, which leads to an increase in glucose in the blood (*hyperglycemia*) (Noviana et al., 2021).

Diabetes Mellitus (DM) is a health problem whose prevalence is increasing, has a great risk of serious complications and often leads to death. Diabetes Mellitus is an important concern in health problems in the world because it belongs to a group of metabolic diseases with hyperglycemia characteristics due to abnormal insulin secretion, insulin action or both, one of which occurs is due to non-compliance with the diet (Dewi dkk, 2022). Diabetes mellitus can be associated with serious complications, but people with DM can take preventive measures to reduce the likelihood of such an event (Maria, 2021).

According to a *World Health Organization* report in 2023, it is estimated that as many as 537 million people worldwide will have diabetes mellitus (DM) in 2021, a sharp increase from 463 million in 2019. In recent decades, the prevalence of diabetes mellitus has continued to surge due to various factors, such as increasing population age, changes in lifestyle, and increasing cases of obesity. The WHO estimates that the number of people with diabetes mellitus will continue to grow, reaching 643 million by 2030 and 783 million by 2045 (WHO, 2023).

In Indonesia, the Indonesian Health Survey (SKI, 2023) shows that the prevalence of DM based on a doctor's diagnosis reaches 1.7% or around 877,531 sufferers. This figure continues to increase from year to year. In South Sulawesi Province, the prevalence of DM was reported at 1.5%. Especially in Bantaeng Regency, the Health Office recorded 256 cases of DM in 2022 in the work area of the Bissappu Health Center, increasing to 307 patients in 2023, and jumping to 512 patients in 2024. In fact, in 2024, 4 patients will die due to DM complications. This shows a significant upward trend as well as a serious public health problem in the region.

One of the main pillars of DM management besides medication and physical activity is adherence to diet. A proper diet helps keep blood sugar levels stable, prevent complications, and improve the quality of life of sufferers. The principles of the DM diet include the 3J's: the exact amount, type, and schedule of foods. However, the reality is that diet adherence is still a big challenge for most sufferers. Many patients do not comply with dietary rules due to lack of knowledge, less supportive attitudes, difficult eating habits to change, and lack of family support (Almaini & Heriyanto, 2019).

Knowledge is information or understanding about a subject that is obtained through experience or learning, both known by individuals and by society in general (Swarjana, 2022). Knowledge is a factor that stimulates or encourages the implementation of health behaviors. Knowledge is the result of "knowing" and arises after humans use their senses against certain objects. Perception occurs through the human senses, that is. vision, hearing, smell, taste and touch. Most of the information comes through people's eyes and ears (Murniati, 2022). Knowledge is an important factor in health behavior. Patients who have a good understanding of the importance of the DM diet are more likely to adhere to the dietary recommendations. On the contrary, a lack of knowledge can lead to errors in dietary arrangements.

In addition to knowledge, a person's tendency to behave is influenced by attitude. Attitude is something related to the perception of behavior and attitudes of actions based on beliefs based on norms that can be relied on in society Notoadmodjo, (2012) in Jamil et al. (2021). Attitude is the way a person thinks and feels about someone or something. Attitude can also be seen as a way of behaving towards certain objects or individuals that reflects how a person thinks and feels (Swarjana, 2022). A positive attitude towards diet management can encourage patient motivation to be more consistent, while a negative attitude has the potential to decrease adherence. Some previous studies, such as those conducted by Wiwin A Muhammad dkk (2022) and Jamil et al. (2021), show that there is a significant relationship between knowledge and attitudes and dietary adherence in people with DM.

Based on preliminary data obtained at the research site, the number of people with diabetes mellitus will increase in 2024 to 512 patients, and in that year there were 4 people with diabetes mellitus who died. The health center officer does not know exactly about the dietary compliance of people with diabetes mellitus because it is not recorded in the officer's report book. Therefore, the researcher is interested in delving deeper into the knowledge and attitudes towards dietary adherence in patients with diabetes mellitus in the work area of the Bissappu health center.

The purpose of this study is to determine the relationship between knowledge and attitudes and dietary adherence in patients with diabetes mellitus in the working area of the Bissappu Health Center in 2025.

MATERIALS AND METHODS

This study uses a quantitative research method with a correlational descriptive

design with a cross-sectional approach. Cross sectional research is also known as transversal research and is often used in epidemiological studies (Notoatmodjo, 2018). The population in this study is all people with diabetes mellitus in the working area of the Bissappu Health Center in 2024 with a total population of 512. The number of samples obtained in this study amounted to 47 respondents using the correlation formula. The technique used in this study is non-probability sampling with the accidental sampling method. This research instrument uses a questionnaire sheet on knowledge, attitudes, and dietary adherence that has been tested for validity and reliability.

Data were analyzed based on measurement scale and research objectives using computerized program software. The data was analyzed in the following ways: (1). Univariate analysis, analysis was carried out to see the proportions. (2). Bivariate analysis, Bivariate analysis is carried out to find out the relationship between independent variables and bound variables with the test used is the Pearson correlation test. This research has obtained ethical feasibility from the Research Ethics Committee of Stikes Panrita Husada Bulukumba with the number 001474/KEP Stikes Panrita Husada Bulukumba/2025.

RESULTS

Based on table 1, it shows that the distribution of adult respondents is 9 people (19.1%), while the pre-elderly are 26 people (55.3%), and the elderly are 12 people (25.5%). Based on gender, the most female category was 36 people (76.6%), while the respondents were male 11 people (23.4%). Based on education level, the most respondents with elementary education were 27 people (57.4%), while the fewest respondents with junior high school and D3 education were 1 person each (2.1%).

Based on employment, the most respondents were unemployed, 33 people (70.2%), and respondents were employed, 14 people (29.8%). Based on family history, the most respondents had a family history of diabetes mellitus in 35 people (74.5%), while those without a family history had 12 people (24.5%). Based on the length of time they had diabetes mellitus > 5 years 19 people (40.4%), while the length of suffering from 5 years < 28 people (59.6%).

Table 1. Distribution of the number of respondents based on the characteristics of respondents in the Bissappu Health Center Working Area in 2025

Respondent Characteristics	Frequency (f)	Percentage (%)
Age		
Adult	9	19.1
Pre-Elderly	26	55.3
Elderly	12	25.5
Gender		
Male	11	23.4
Women	36	76.6
Education		
SD	27	57.4
SMP	1	2.1
SMA	15	31.9
D3	1	2.1
S1	3	6.4
Jobs		
Work	14	29.8
Not Working	33	70.2
Family History		
Ada	35	74.5
None	12	24.5
Long Suffering		
Long (> 5 Years)	19	40.4
New (< 5 years)	28	59.6
Total	47	100

Based on table 2, it shows that the distribution of respondents with good knowledge is 23 people (48.9%), while knowledge is lacking 24 people (51.1%).

Table 2. Distribution of Frequency of Respondents Based on Knowledge in the Working Area of the Bissappu Health Center in 2025

Knowledge	Frekuensi (f)	Percentage (%)
Good	23	48.9
Less	24	51.1
Quantity	47	100

Based on table 3 above, it shows that the distribution of respondents with good attitudes is 21 people (44.7%), while negative attitudes are 26 people (55.3%).

Table 3 Distribution of Respondent Frequency Based on Attitude in the Bissappu Health Center Working Area in 2025

Attitude	Frekuensi (f)	Percentage (%)
Good	21	44.7
Less	26	55.3
Quantity	47	100

Based on table 4 above, it shows that the distribution of respondents who comply with the diet is 22 people (46.8%), while those who do not comply are 25 people (53.2%).

Table 4. Distribution of Respondent Frequency Based on Dietary Compliance in the Working Area of the Bissappu Health Center in 2025

Diet Adherence	Frekuensi (f)	Percentage (%)
Obedient	22	46.8
Non-compliant	25	53.2
Quantity	47	100

Based on table 5, it shows that respondents with the category of good knowledge, as many as 23 people (74.2%) are compliant with the diet, while 8 people (25.8%) are not compliant with the diet. In the group of respondents with poor knowledge categories, as many as 7 people (43.8%) were compliant with the diet, while 9 people (56.3%) were not compliant with the diet.

Table 5. Relationship of Knowledge with Diet Compliance in the Working Area of the Bissappu Health Center in 2025

Knowledge	Diet Adherence				Total		<i>r</i>	<i>p value</i>
	Obedient		Non-compliant		N	%		
	N	%	N	%				
Good	23	74.2	8	25.8	31	100.0	0.476	0.001
Not Good	7	43.8	9	56.3	16	100.0		
Quantity	30	63.8	17	36.2	47	100.0		

Based on table 6 above, it shows that respondents with the category of good attitude, as many as 21 people (70.0%) are compliant with the diet, while 9 people (30.0%) are not compliant with the diet. In the group of respondents with poor attitude category, as many as 9 people (52.9%) were compliant with the diet, while 8 people (47.1%) were not compliant with the diet.

Table 6. Relationship between Attitude and Diet Compliance in the Working Area of the Bissappu Health Center in 2025

Attitude	Diet Adherence				Total		<i>r</i>	<i>p value</i>
	Obedient		Non-compliant		N	%		
	N	%	N	%				
Good	21	70.0	9	30.0	30	100.0	0.418	0.003
Not Good	9	52.9	8	47.1	17	100.0		
Quantity	30	63.8	17	36.2	47	100.0		

DISCUSSION

The Relationship of Knowledge with Dietary Compliance in the Working Area of Bissappu Health Center

Based on the results of the statistical test analysis used, it shows that *the value of p* = 0.001 (<0.05), it can be concluded that there is a relationship between knowledge and dietary compliance in the work area of the Bissappu Health Center. With a *Pearson correlation* coefficient value of 0.476 with the medium category, it shows that the direction of the correlation is positive (unidirectional) which means that the higher the patient's knowledge, the better the diet adherence they have. Of the 47 respondents, 23

people (48.9%) had good knowledge, while 24 people (51.1%) had poor knowledge.

Knowledge of the Diabetes Mellitus diet is the first step in increasing the adherence of diabetic patients regarding their dietary patterns. Compliance with diabetic patients in implementing the diet is the main key to the stability of the health condition of diabetic mellitus patients Tulinca et al., (2018) in Rionaldi & Yulianti, (2022). There are several factors that can affect knowledge, including education, work and age (Dewi, 2021). Patient knowledge about the management of Diabetes Mellitus is very important in dealing with the disease. If the patient has a low level of knowledge, then his attitude and adherence to Diabetes Mellitus treatment tends to be low (Jamil et al., 2021). Diabetics who have good knowledge generally show a high level of compliance in an effort to prevent complications from the disease. A good understanding of the importance of discipline in living a healthy lifestyle also plays a role in keeping the body stable and avoiding complications. On the other hand, people with diabetes mellitus who lack a good understanding of the diabetes mellitus diet tend to experience obstacles in the treatment process and show non-compliant behavior, so they do not follow the recommendations given by health workers (Rionaldi & Yulianti, 2022).

The results of this study are in line with the research conducted by Wardhani (2021) entitled The relationship between knowledge and dietary adherence in patients with diabetes mellitus in the work area of the Astambul Health Center in 2020 which shows that there is a relationship between knowledge and dietary adherence in people with diabetes mellitus. The higher the patient's knowledge, the better the diet adherence they have. This is in line with research conducted by Lestari et al. (2023) explaining that the better a person's knowledge of health, the better the behavior in disease prevention such as adherence to consuming food in people with diabetes mellitus. Another study conducted by Adu et al. (2019), explained that a person's level of education can also affect blood sugar stability because the higher a person's level of education, the better a person's knowledge will be in terms of preventing disease complications and using technology to find information about DM disease management and control blood sugar levels in the body.

According to the researchers' assumptions, a lack of knowledge can be an obstacle in forming health-compliant behaviors, as individuals will have difficulty in understanding and following directions from health workers. Therefore, people with diabetes mellitus with a good level of knowledge tend to better understand and be able

to carry out recommendations related to diet management.

The Relationship between Attitude and Diet Compliance in the Working Area of the Bissappu Health Center

Based on the results of the statistical test analysis used showing that *the value* $p = 0.003 (<0.05)$, it can be concluded that there is a relationship between attitude and diet compliance in the work area of the Bissappu Health Center. With a *Pearson correlation coefficient* value of 0.418 with the medium category, it shows that the direction of the correlation is positive (unidirectional) which means that the better the patient's attitude, the better the diet adherence they have. Of the 47 respondents, 21 people (44.7%) had a good attitude, while 26 people (55.3%) had a poor attitude.

A positive attitude is one of the factors that play a role in increasing the compliance of diabetes mellitus patients. Attitude can be interpreted as behavior or action based on beliefs and principles that individuals believe in. In general, patients with diabetes mellitus who have a positive attitude tend to believe that adherence to treatment is very important in achieving therapy success. Therefore, patients with good attitudes tend to show a higher level of adherence in undergoing treatment (Syifa & Jaya, t.t., 2022). Negative attitudes and improper management in DM sufferers are very likely to cause complications (Nathan, 2019).

Diet is a form of disease prevention for people with diabetes mellitus, so it is very important for every patient to have a positive attitude in supporting the implementation of a diet to prevent complications, both acute and chronic. If the patient does not have a supportive attitude towards a diabetic diet, the risk of complications will increase and can lead to death. This attitude is greatly influenced by the level of knowledge of patients about diabetes mellitus itself Phitri & Widiyaningsih, (2013) in Keumalahayati dkk., (2019).

The results of this study are in line with the research conducted by Jaya et al., (2019) entitled The Relationship of Knowledge, Motivation, and Attitude with Diet Adherence in Patients with Type 2 Diabetes Mellitus in the Working Area of the Sudiang Raya Health Center, Makassar City which shows that there is a relationship between attitude and diet adherence. The better the attitude of the sufferer, the better the diet adherence they have. This is in line with research conducted by Fikar et al. (2024) explaining that people with diabetes mellitus who have a bad attitude tend not to adhere to the diet while respondents who have a good attitude mostly adhere to the diet

recommended by doctors.

Thus, researchers assume that attitude is one of the main factors that greatly affect adherence to dieting, given the strong relationship between the two, Therefore, counseling and in-depth education about diabetes mellitus is an important step in forming better dietary behavior.

CONCLUSION

Based on the results of the research and discussion that has been described previously, it can be concluded that there is a relationship between knowledge and attitudes and dietary adherence in people with diabetes mellitus in the work area of the Bissappu Health Center in 2025. It is hoped that patients can follow a diet in accordance with the recommendations of health workers, both in terms of type, portions, and meal schedules, as well as implement a healthy lifestyle in dealing with diabetes mellitus. The next study is expected to examine variables that are more influential and have a strong relationship with the level of adherence to the management of diabetes mellitus, as well as use a larger sample number to make the research results more representative.

REFERENCES

- Adu, M. D., Malabu, U. H., Aduli, A. E. O. M., & Aduli, B. M. S. M. 2019. Enablers and Barriers to Effective Diabetes Self- Management: A Multi National Investigation. Public Library of Science. Vol. 14, Issue 6, Hal. 1-22.
- Almaini, A., & Heriyanto, H. (2019). Pengaruh Kepatuhan Diet, Aktivitas Fisik dan Pengobatan dengan Perubahan Kadar Gula Darah pada Pasien Diabetes Mellitus Suku Rejang. *Jurnal Keperawatan Rafflesia*, 1(1), 55-66. <https://doi.org/10.33088/jkr.v1i1.393>
- Dewi, N. P. D. A. (2021). *HUBUNGAN TINGKAT PENGETAHUAN, KEPATUHAN DIET, DAN KADAR GLUKOSA DARAH PASIEN DIABETES MELITUS TIPE 2*. Poltekkes Kemenkes Denpasar Jurusan Gizi 2021.
- Dewi, R, Panduragan, S. L., Umar, N. S., Melinda, F., & Budhiana, J. (2022). The Effect of Religion, Self-Care, and Coping Mechanisms on Quality of Life in Diabetes Mellitus Patients. *Jurnal Keperawatan Padjadjaran*, 10(1), 58-65.
- Fikar, M., Sulaiman, E., Mustafa, Azim, L., O. (2024). Hubungan Pengetahuan Dan Sikap Dengan Kepatuhan Diet Pada Penderita Diabetes Mellitus Di Wilayah Kerja Puskesmas Poasia Kota Kendari Tahun 2023. *Jurnal Penelitian Sains dan Kesehatan Avicenna*. 3 (2).

- Jamil, M., Dorisnita, D., & Ardayanti, L. (2021). Hubungan Pengetahuan dan Sikap Pasien dengan Kepatuhan Penatalaksanaan Diabetes Melitus di Poliklinik Khusus Penyakit Dalam RSUP Dr. M. Djamil Padang. *Jurnal Ilmiah Universitas Batanghari Jambi*, 21(2), 911. <https://doi.org/10.33087/jiubj.v21i2.158>
- Jaya, Hj. N., Muhasidah, M., & Rahmiyanti, R. (2019). Hubungan Pengetahuan, Motivasi, Dan Sikap Dengan Kepatuhan Diet Pada Penderita Dm Tipe 2 Di Wilayah Kerja Puskesmas Sudiang Raya Kota Makassar. *Media Keperawatan: Politeknik Kesehatan Makassar*, 10(2), 62. <https://doi.org/10.32382/jmk.v10i2.1105>
- Keumalahayati, K., Supriyanti, S., & Kasad, K. (2019). Hubungan pengetahuan dan sikap terhadap kepatuhan diet diabetes mellitus pada pasien rawat jalan di RSUD Kota Langsa. *Jurnal SAGO Gizi dan Kesehatan*, 1(1), 113. <https://doi.org/10.30867/gikes.v1i1.306>
- Lestari, R. M., & Prasida, D. W. (2023). Hubungan Tingkat Pengetahuan dengan Kepatuhan Diet pada Penderita Diabetes Mellitus Di Puskesmas Kereng Bangkirai
The Corellation of Knowledge Level With Diet Compliance in Diabetes Mellitus Patiients at Keeng Bangkirai Puskesmas.
- Maria, I. (2021). *Asuhan Keperawatan Diabetes Mellitus Dan Asuhan Keperawatan Stroke*. Deepublish.
- Murniati. (2022). *Upaya Peningkatan Pengetahuan Pasien Dm Tipe Ii Melalui Diit Dan Senam Kaki*. Nem.
- Nathan, D. M., Bennett, P. H., Crandall, J. P., Edelstein, S. L., Goldberg, R. B., Kahn, S. E., ... White, N. H. (2019). Does diabetes prevention translate into reduced long-term vascular complications of diabetes? *Diabetologia*, 62(8), 1319–1328. <https://doi.org/10.1007/s00125-019-4928-8>
- Notoatmodjo, S. (2012). Promosi kesehatan dan perilaku kesehatan.
- Notoatmodjo, S. (2018). *Metodologi Penelitian Kesehatan*. Jakarta : Rineka Cipta
- Noviana, I., Ari, D., & Widigdo, M. (2021). Treatment Of Grade Ii Diabetic Ulcer With Mindi Leaf Hydrogel (Melia Zadarach L) Against Wound Healing Process. *Strada Jurnal Ilmiah Kesehatan*, 10(1), 318–324. <https://doi.org/10.30994/sjik.v10i1.629>
- Phitri, H. E., & Widiyaningsih. (2013). Hubungan Antara Pengetahuan Dan sikap Penderita Diabetes Mellitus Dengan Kepatuhan Diet Diabetes Mellitus Di RSUD AM. Parikesit Kalimantan Timur. *Jurnal Keperawatan Medikal Bedah*, 1(1), 58–74.

- Rionaldi, Yulianti, Y., (2022). Hubungan Pengetahuan Tentang Diet Dengan Kepatuhan Dalam Pelaksanaan Diet Pada Penderita Diabetes Mellitus Tipe II Di Desa Bojongsari Wilayah Kerja Puskesmas Jampangkulon Kabupaten Sukabumi. *Jurnal Health Society*. 11 (2).
- Survei Kesehatan Indonesia (SKI).(2023). Kemenkes BKPK. Tim Penyusun SKI 2023 Dalam Angka
- Swarjana, K.I., (2022). Konsep Pengetahuan, Sikap, Perilaku, Persepsi, Stres, Kecemasan, Nyeri, Dukungan Sosial, Kepatuhan, Motivasi, Kepuasan, Pandemi Covid-19, Akses Layanan Kesehatan - Lengkap Dengan Konsep Teori, Cara Mengukur Variabel, Dan Contoh Kuesioner. Yogyakarta : Andi.
- Syifa, S. N., & Jaya, M. K. A. (T.T.). (2022). Pengaruh Motivasi, Dukungan Keluarga, Sikap Dan Pengetahuan Terhadap Tingkat Kepatuhan Pasien Diabetes Melitus.
- Tilinca, M. C., Pal, S., Preg, Z., Barabas-Hajdu, E., Tilinca, R., German-Sallo, M., & Nemes Nagy, E. (2018). The relationship of metabolic and endocrine parameters with associated diseases in diabetes mellitus. *Rev Chim*, 69(5), 1288–1291.
- Wardhani, A. (2021). Hubungan Pengetahuan Dengan Kepatuhan Diet Pada Penderita Diabetes Melitus Di Wilayah Kerja Puskesmas Astambul Tahun 2020. *Jurnal Ilmu Kesehatan Insan Sehat*, 9(1), 10–14. <https://doi.org/10.54004/jikis.v9i1.16>
- WHO. (2022). Diabetes.<https://www.who.int/news-room/factsheets/detail/diabetes>
- WHO. (2023). Classification of Diabetes Mellitus. In *Clinics in Laboratory Medicine* (Vol. 21, Issue 1). https://doi.org/10.5005/jp/books/12855_84
- Wiwin A Muhammad, Nelfa Fitria Takahepis, & Nurlela Hi Baco. (2022). Hubungan Pengetahuan Dengan Kepatuhan Diet Pada Pasien Diabetes Melitus Tipe Ii. *Jurnal Rumpun Ilmu Kesehatan*, 2(1), 58–71. <https://doi.org/10.55606/jrik.v2i1.528>