



## AN OVERVIEW OF DIABETES MELLITUS PATIENTS

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### ABSTRACT

Dietary compliance among patients with type 2 diabetes mellitus (T2DM) is a crucial aspect of disease management, yet many patients in rural areas, including the Pengarayan Health Center service area in Ogan Komering Ilir Regency, still exhibit low adherence. Several factors such as knowledge, education level, family support, and healthcare worker involvement are suspected to influence this behavior. Objective to provide an overview of the levels of knowledge, family support, healthcare worker support, and dietary compliance among T2DM patients in the working area of Pengarayan Health Center, Tanjung Lubuk Subdistrict. This was a quantitative descriptive study using a cross-sectional design. Total sampling was applied to 125 T2DM patients registered in the health center area. Data were collected using validated and reliable questionnaires measuring knowledge, family support, healthcare worker support, and dietary compliance. The study found that 63.2% of patients had low knowledge, 51.2% received good family support, and 64.0% reported support from health workers. Dietary compliance was found in 50.4% of respondents. Educational attainment showed a strong relationship with compliance, where those with higher education levels were more adherent to dietary recommendations. Knowledge level and family support play a vital role in dietary compliance among T2DM patients. Strengthening education and involving family and healthcare professionals more actively could significantly improve adherence to dietary guidelines and better disease control outcomes.

Keywords: dietary compliance; family support; healthcare support; knowledge; type 2 diabetes mellitus

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## INTRODUCTION

Type 2 Diabetes Mellitus (T2DM) is a chronic disease that requires long-term management, including adherence to an appropriate diet. Dietary compliance among patients with T2DM is influenced by several factors, particularly educational level and healthcare support. Individuals with higher levels of education tend to have better comprehension of health-related information and are more motivated to adopt healthier behaviors (Suhartatik, 2022). Previous studies have also indicated a significant correlation between educational attainment and dietary compliance, especially in managing energy intake (Dewi, 2018). In one study, 72.1% of respondents with low educational levels exhibited poor dietary adherence.

In addition to education, support from healthcare providers plays a crucial role in improving dietary compliance among T2DM patients. Studies by Erma (2019), Rahayu (2020), and Kusumayanti (2019) emphasize that healthcare professionals can offer accurate information, education on complication prevention, and appropriate motivation and treatment. Within the framework of the Minimum Service Standards (SPM) in Health Services, healthcare workers hold a strategic position in ensuring the delivery of accessible and high-quality care, including continuous education and monitoring of dietary practices among T2DM patients.

Adherence to a proper diet is critical in controlling blood glucose levels and preventing serious complications. However, many patients face challenges such as irregular eating patterns, limited understanding of appropriate diets, restricted access to healthy foods, and lack of social support—including family involvement. The gap between national health policies, such as Minister of Health Regulation No. 6 of 2024, and local implementation, as observed in Ogan Komering Ilir (OKI) Regency, remains a major challenge.

Data from the South Sumatra Provincial Health Office show a significant increase in T2DM cases, from 279,345 in 2021 to 434,296 in 2023. Ogan Komering Ilir Regency alone recorded 40,082 cases in 2021, rising to 45,811 cases in 2023, ranking it the second-highest in prevalence within the province. Specifically, in the working area of Pengarayan Health Center, Tanjung Lubuk Subdistrict, OKI Regency, the number of T2DM patients increased from 14,321 in 2021 to 15,761 in 2022, with an additional 1,857 cases in 2023 (OKI Health Office, 2024). A preliminary study involving 8 patients revealed that 37.5% had poor understanding of diabetes management. Furthermore, 50% of respondents with low education (elementary or junior high school) struggled to manage their condition properly due to limited knowledge about the importance of diet. About 87.5% acknowledged the significant role of healthcare providers in helping them improve dietary compliance. However, 50% reported a lack of family support, which negatively impacted their motivation to maintain a healthy diet. The lack of understanding among family members about the importance of proper dietary practices often leads to inadequate assistance in food preparation and emotional support.

Efforts to improve dietary compliance among T2DM patients in Pengarayan include nutrition counseling by dietitians, monthly implementation of the Chronic Disease Management Program (Prolanis), public education on dietary guidelines, and routine blood glucose monitoring. Despite these initiatives, many patients still fail to follow dietary recommendations, indicating low public awareness and the need for more effective strategies. Based on this background, this study aims to explore dietary compliance of patients with type 2 diabetes mellitus at the Pengarayan Health Center, Tanjung Lubuk Subdistrict, Ogan Komering Ilir Regency.

## **METHOD**

This research is quantitative in nature, employing a descriptive approach with a cross-sectional design. The cross-sectional method involves conducting measurements or observations at a single point in time. The study was conducted in the working area of Tanjung Lubuk, Ogan Komering Ilir Regency. The population consisted of all registered type 2 diabetes mellitus patients who routinely received treatment at the Pengarayan Public Health Center, Tanjung Lubuk Subdistrict, totaling 125 individuals. This population was chosen because it aligns with the study's objectives—specifically, individuals with chronic conditions requiring dietary compliance as part of disease management. The sampling technique used in this study was total sampling, in which the entire population meeting the inclusion criteria was included as research participants. This method ensures comprehensive data collection from all eligible subjects, increasing the accuracy and representativeness of the study findings. The research instrument is a tool used to measure the variables under observation (Sugiyono, 2019). The instruments used in this study include demographic data and questionnaires that have been tested for validity and reliability. The questionnaires were filled out directly by the respondents after the researcher provided an explanation on how to complete them. The instruments used in this study are as follows:

### **1. Knowledge**

The knowledge variable was assessed using a questionnaire adopted from a study by Larasati et al. (2019), known as the DKQ-24 (Diabetes Knowledge Questionnaire-24), which consists of 24 items. The questionnaire covers three areas: basic information (10 items), glycemic control (7 items), and complication prevention (7 items). Each question has three response options: “Yes,” “No,” or “Don't Know.” Scoring is based on the number of correct answers: correct answers are scored 1, while incorrect or “don't know” answers are scored 0. The level of knowledge is categorized as follows: high (17–24 points), moderate (10–16 points), and low (0–9 points) (Larasati et al., 2019).

Validity testing of the DKQ-24 conducted at Tlogosari Kulon Public Health Center in Semarang with 30 respondents showed that all items were valid, with correlation

coefficients (r-count) greater than the r-table value (0.361). Reliability testing of the DKQ-24 yielded a Cronbach’s alpha score of 0.913, indicating high reliability, as a Cronbach’s alpha greater than 0.60 is considered acceptable.

**2. Family Support**

This questionnaire was derived from a study by Satria et al. (2022) and includes several items assessing family support received by the respondent. It uses a 4-point Likert scale. A total score of less than 48 indicates poor family support, whereas a score greater than 48 indicates good family support. The validity test results for the HDFSS questionnaire showed correlation values ranging from 0.347 to 1.265 (Satria et al., 2022).

**3. Health Worker Support**

The health worker support questionnaire was adapted from a study by Fajryn (2017) and consists of five questions about the support provided by health workers in relation to dietary adherence among patients with type 2 diabetes. Respondents were asked to check either "Yes" or "No." Each item carries a weight of 20 points, so if all five items are answered correctly, the total score is 100%. The categorization is as follows: “Not Supportive” if the score is ≤60%, and “Supportive” if the score is >60% (Fajryn, 2017). The validity test showed that all items had r-count values higher than the r-table value (0.444), indicating all items were valid. The reliability test also showed that the Cronbach’s alpha value (0.936) exceeded the r-table, confirming the reliability of the questionnaire.

**4. Dietary Compliance for Type 2 Diabetes Mellitus**

The dietary compliance questionnaire was adopted from a study by Ichsanudin and Hery Purnomo (2021) and consists of 9 items related to adherence to a diabetic diet. The questionnaire uses a 5-point Likert scale: Strongly Agree (5), Agree (4), Neutral (3), Disagree (2), and Strongly Disagree (1). The minimum possible score is 9, and the maximum is 45. A higher score indicates greater agreement with the statement and higher compliance. Compliance categories are defined as follows:

1. Compliant: total score between 33–45
2. Non-Compliant: total score less than 33 (Ichsanudin & Hery Purnomo, 2021).

**RESULT**

Table 1.  
Respondent characteristics (n= 125)

Respondent characteristics	f	%
Knowledge		
High	21	16,8
Moderate	25	20,0
Low	79	63,2
Family Support		
Supportive	64	51,2
Not Supportive	61	48,8
Education		
Elementary School	47	37,6
Junior High School	18	14,4
Senior High School	25	20,0
Higher Education	35	28,0
Support from Health Workers		
Not Supportive	45	36,0
Supportive	80	64,0
Dietary Compliance in DM		
Non-Compliant	62	49,6
Compliant	63	50,4

The results of the study show that the majority of diabetes mellitus patients had a low level of knowledge, accounting for 63.2% (79 individuals), while 20.0% (25 individuals) had a moderate level of knowledge, and only 16.8% (21 individuals) demonstrated a high level of knowledge. In terms of family support, 51.2% (64 individuals) received supportive

involvement from their families, whereas 48.8% (61 individuals) reported a lack of such support. The educational background of participants varied, with 37.6% (47 individuals) having completed elementary school, 14.4% (18 individuals) having junior high school education, 20.0% (25 individuals) having completed senior high school, and 28.0% (35 individuals) having attained a higher education degree. Support from healthcare personnel was reported by 64.0% (80 individuals), while 36.0% (45 individuals) indicated they did not receive adequate support. Regarding dietary compliance, 50.4% (63 individuals) were categorized as adherent to dietary recommendations for diabetes management, while 49.6% (62 individuals) were found to be non-adherent

## **DISCUSSION**

### **a) Knowledge**

The results of the study show that the majority of patients had a low level of knowledge, with 79 respondents (63.2%) out of a total of 125. Meanwhile, 25 respondents (20.0%) had a moderate level of knowledge, and 21 respondents (16.8%) had a high level of knowledge. Regarding dietary compliance, 63 respondents (50.4%) were categorized as compliant, while 62 respondents (49.6%) were non-compliant. This study aligns with the findings of Farida et al. (2020), which stated that most diabetes mellitus patients have low nutritional knowledge, contributing to low adherence to dietary recommendations. Similarly, Muhammad et al. (2024) found a significant relationship between knowledge and dietary compliance ( $p = 0.010$ ), indicating that the lower the patient's level of knowledge, the lower their compliance. A study by Rosi (2022) at Ketabang Health Center, Surabaya, also concluded that patients with good knowledge tend to be more compliant with dietary recommendations than those with low knowledge.

### **b) Family Support**

This study showed that the majority of patients received family support, with 64 respondents (51.2%) receiving support, slightly more than the 61 respondents (48.8%) who did not, out of a total of 125. This result is in line with research conducted by Asniar et al. (2023), who found that most patients with good psychological support from their families tended to be more compliant with their diet. Of the 86 respondents, 39 (45.3%) received good psychological support, and 29 of them (33.7%) adhered to the diet. Conversely, patients with limited psychological or social support showed lower levels of compliance. These findings reinforce the importance of both psychological and social support from the family in improving dietary compliance among diabetes mellitus patients.

### **c) Education Level**

The study revealed that most patients had a low level of education, with 47 respondents (37.6%) having only completed elementary school (SD). Compliance with the diabetes diet appeared to vary based on education level. Respondents with elementary education had the highest non-compliance rate, with 42 individuals (89.4%) not adhering to the diet. On the other hand, higher compliance was found among those with higher educational levels: 61.1% among junior high school (SMP) graduates, 84.0% among senior high school (SMA) graduates, and 74.3% among college graduates. This aligns with a study by Fitriani et al. (2021), which stated that education level significantly influences dietary compliance in diabetes patients, as those with higher education are better able to receive and understand health information. Furthermore, Prasetyo and Wahyuni (2022) found that respondents with higher education had better awareness of the consequences of not following a diet, leading to greater compliance. Similarly, Lestari (2020) noted that patients with lower educational backgrounds tend to have difficulty understanding information provided by healthcare professionals, which impacts their compliance.

### **d) Support from Healthcare Personnel**

The study showed that most patients received support from healthcare personnel, with 80 respondents (64.0%) receiving support, compared to 45 respondents (36.0%) who did not, out of 125 respondents. Interestingly, those who did not receive support showed a higher

compliance rate, with 32 respondents (71.1%) adhering to the diet and 13 (28.9%) not adhering. In contrast, among those who received support from healthcare workers, more were non-compliant: 49 respondents (61.3%) did not adhere to the diet, while only 31 (38.8%) were compliant. This finding is consistent with research by Yanti et al. (2021), which emphasized that the active role of healthcare professionals, particularly in providing accurate information and counseling, greatly influences patient compliance. Lestari (2020) also found that patients who received regular support from healthcare providers had better-controlled blood sugar levels due to better compliance with dietary recommendations. Furthermore, Maulidiyah (2022) emphasized that support from healthcare personnel is crucial in raising awareness and enhancing patient compliance in managing chronic diseases such as diabetes. This suggests that healthcare providers play a role not only as information sources but also as motivators and facilitators in shaping healthy behaviors in patients.

## CONCLUSION

This study concludes that the majority of diabetes mellitus patients in the working area of Pengarayan Public Health Center, Tanjung Lubuk Subdistrict, Ogan Komering Ilir Regency, have a low level of knowledge regarding their condition, which may hinder effective disease management. While more than half of the participants reported supportive family involvement and adequate support from healthcare personnel, a considerable proportion still lacked such support. The educational background of most respondents was relatively low, with a large number having only completed elementary school. Despite these challenges, nearly half of the patients were adherent to dietary recommendations, indicating a potential for improvement through targeted education and enhanced support systems. Strengthening knowledge and involving both family members and healthcare providers more actively could significantly contribute to better dietary compliance and overall management of diabetes mellitus.

## REFERENCES

- Asniar, F., dkk. (2023). Hubungan dukungan keluarga dengan kepatuhan diet pasien diabetes mellitus tipe 2 di wilayah kerja Puskesmas Malaka Kecamatan Lalabata Kabupaten Soppeng. *JIMPK: Jurnal Ilmiah Mahasiswa & Penelitian Keperawatan*, 3(5), 2023.
- Dewi, S. K., & Sudaryanto, A. (2018). Validitas dan reliabilitas kuisioner pengetahuan, sikap dan perilaku. Program Studi Keperawatan, Universitas Muhammadiyah Surakarta, 73–79.
- Direktorat Pengendalian PTM. (2022). *Pedoman pengendalian diabetes mellitus dan penyakit metabolik*. Departemen Kesehatan RI.
- Dinas Kesehatan Provinsi Sumatera Selatan. (2022). *Data diabetes mellitus di Kabupaten Ogan Komering Ilir*.
- Fajrin, F. I. (2017). Gambaran pengetahuan ibu hamil trimester III tentang tanda bahaya kehamilan berdasarkan usia, pendidikan dan pekerjaan, 52(1), 1–5.
- Farida, L., Sari, R. P., & Nugroho, Y. (2020). Hubungan antara pengetahuan gizi dengan kepatuhan diet pada pasien diabetes mellitus tipe 2 di Puskesmas Karanganyar. *Jurnal Gizi dan Kesehatan*, 12(2), 85–91.
- Fitriani, R., Susanti, E., & Pranata, D. (2021). Hubungan tingkat pendidikan dengan kepatuhan diet pada pasien diabetes mellitus tipe 2 di Puskesmas Kota Bengkulu. *Jurnal Keperawatan Indonesia*, 14(2), 123–130.
- Ichsannudin, & Hery Purnomo. (2021). *Monograf analisis gaya hedonis, status sosial, variasi produk terhadap keputusan pembelian melalui citra merek*. Bandung: Media Sains Indonesia.

- IDF. (2013). *IDF Diabetes Atlas* (6th ed.). International Diabetes Federation. [http://www.idf.org/sites/default/files/EN\\_6E\\_Atlas\\_Full\\_0](http://www.idf.org/sites/default/files/EN_6E_Atlas_Full_0)
- IDF. (2014). *IDF Diabetes Atlas*. <http://www.idf.org/atlasmap/atlasmap>
- International Diabetes Federation. (2021). *IDF Diabetes Atlas* (10th ed.). [https://diabetesatlas.org/idfawp/resourcefiles/2021/07/IDF\\_Atlas\\_10th\\_Edition\\_2021.pdf](https://diabetesatlas.org/idfawp/resourcefiles/2021/07/IDF_Atlas_10th_Edition_2021.pdf)
- Insuyah, & Hastuti. (2016). Sukrosa dan DM. Dalam: Waspadji S., Sukardji K.
- Kusumayanti. (2019). Studi literatur hubungan tingkat pengetahuan diet diabetes dan kepatuhan diet penderita diabetes mellitus tipe 2. *Jurnal Ilmu Gizi: Journal of Nutrition Science*, 12(4).
- Larasati, R., & Hudiyawati, D. (2019). Hubungan dukungan keluarga dengan tingkat kecemasan pasien DM tipe 2.
- Lestari, S. (2020). Pengaruh pendidikan terhadap kepatuhan diet pasien diabetes mellitus di wilayah kerja Puskesmas Tanjung Karang. *Jurnal Kesehatan Masyarakat*, 8(1), 45–52.
- Muhammad, R., Lestari, D. A., & Fadhillah, N. (2024). Pengaruh tingkat pengetahuan terhadap kepatuhan diet pasien diabetes mellitus di wilayah kerja Puskesmas Andalas Padang. *Jurnal Kesehatan Masyarakat Andalas*, 18(1), 22–29. <https://doi.org/10.25077/jka.v18n1.2024.22-29>
- P2PTM Kemenkes RI. (2019). Apa definisi aktivitas fisik. <http://p2ptm.kemkes.go.id/infographicp2ptm/obesitas/apa-definisi-aktivitas-fisik>
- P2PTM Kemenkes RI. (2022). Penyakit DM. Kementerian Kesehatan Republik Indonesia. <https://p2ptm.kemkes.go.id/informasi-p2ptm/penyakit-diabetes-melitus>
- Padmi, N., & Rahayu, S. (2022). Hubungan motivasi dengan kepatuhan diet pada pasien diabetes mellitus di Puskesmas Kawali, Ciamis. *Jurnal Keperawatan*, 10(1), 45–52.
- PERKENI. (2021). *Pedoman pengelolaan dan pencegahan diabetes melitus tipe 2 di Indonesia*. Jakarta: PB PERKENI.
- Prasetyo, H., & Wahyuni, S. (2022). Tingkat pendidikan sebagai faktor yang mempengaruhi kepatuhan diet diabetes mellitus tipe 2. *Jurnal Ilmu Keperawatan*, 10(3), 210–218.
- Rahayu. (2020). Hubungan usia, jenis kelamin dan indeks massa tubuh dengan kadar gula darah puasa pada pasien DM tipe 2 di Klinik Pratama Rawat Jalan Proklamasi, Depok, Jawa Barat. *Jurnal Kesehatan Kusuma Husada*, Januari 2020.
- Rosi, I. (2022). Hubungan tingkat pengetahuan dengan kepatuhan diet pada pasien diabetes mellitus di Puskesmas Ketabang Surabaya. *Jurnal Ilmu Keperawatan Komunitas*, 7(1), 50–56.
- Satria, D., et al. (2022). Dukungan keluarga dengan kepatuhan diet pada pasien diabetes mellitus tipe 2 di wilayah kerja Puskesmas Baiturrahman Banda Aceh. *Family Support and Dietary Adherence in Type 2 Diabetes Mellitus Patients in Puskesmas Baiturrahman Banda Aceh*.
- Siti Suhartatik. (2022). Faktor-faktor yang mempengaruhi tingkat kepatuhan diet penderita diabetes mellitus, 8(3), 148–156.
- World Health Organization (WHO). (2021). *Diabetes: Fact Sheet*. <https://www.who.int/news-room/fact-sheets/detail/diabetes>.