



FACTORS RELATED TO THE QUALITY OF LIFE OF TYPE II DIABETES MELLITUS PATIENTS

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ABSTRACT

Type II diabetes mellitus is a chronic disease with an increasing prevalence that significantly impacts patients' quality of life. Behavioral and psychosocial factors are thought to play a role in determining quality of life. The objective of this study was to identify the factors that influence the quality of life of patients with type II diabetes mellitus. A quantitative cross-sectional study was conducted on 147 patients at a community health center in Sukabumi City using proportional random sampling. The instruments used included the HDFSS, DMSES, DQOL, SDSCA, and PDAQ, which have been tested for validity and reliability. Data analysis used the chi-square test and binary logistic regression. The results showed significant simultaneous relationship between self-care ($p = 0.027$; $OR = 17.77$), family support ($p = 0.036$; $OR = 15.89$), diet adherence ($p = 0.004$; $OR = 65.11$), and self-efficacy ($p = 0.047$; $OR = 15.61$) with quality of life, with dietary adherence being the most dominant factor. It was concluded that self-care, family support, dietary adherence, and self-efficacy play a significant role in the quality of life of type II diabetes mellitus patients, with dietary adherence being the main determinant.

Keywords: diabetes mellitus type II; diet adherence; family support; quality of life; self-care

How to cite (in APA style)

Dewi, R., Ashfiya, R. A. M., Novianti, L. S., Zanah, Z. R., Muhaimin, R., & Budhiana, J. (2026). Factors Related to the Quality of Life of Type II Diabetes Mellitus Patients. *Indonesian Journal of Global Health Research*, 8(5), 241–248. <https://doi.org/10.37287/ijghr.v8i5.1679>.

INTRODUCTION

Noncommunicable diseases (NCDs) have become a global concern due to their significant increase in prevalence each year. One NCD that has received particular attention is diabetes mellitus (DM) (Fikar et al., 2024). The International Diabetes Federation (IDF) 2025 shows that around 11.1% of the adult population aged 20–79 years, or 1 in 9 people, live with diabetes, with more than 40% of them unaware that they have the disease. Projections for 2050 estimate that this figure will continue to rise to 1 in 8 adults worldwide, or approximately 853 million people, representing an increase of 46%. The majority of cases, more than 90%, are type 2 diabetes mellitus (DMT2) (IDF, 2025a).

Indonesia ranks fifth in the world in terms of the number of adults with diabetes, reaching 20.4 million in 2024 and is estimated to jump to 28.6 million in 2050 (IDF, 2025b). The 2018 Basic Health Research (Riskesdas) data recorded that the prevalence of diabetes in Indonesia reached 10.9%. Several years later, the results of the 2023 Indonesian Health Survey (SKI) showed an increase in the prevalence of diabetes based on blood sugar level tests in people aged ≥ 15 years to 11.7% (Kemenkes RI, 2024). DM is a metabolic disease characterized by hyperglycemia, which is an increase in blood glucose levels caused by a disruption in insulin production or the body's response to insulin (Budianto et al., 2022). DM is a chronic disease that cannot be cured and can have serious consequences for sufferers (Damayanti et al., 2023). Complications of DM significantly affect morbidity rates and cause an increase in complaints experienced by patients, both physical and psychological and emotional complaints, which also affect physical and social activities and other complaints, thereby reducing a person's quality of life as the disease worsens (Juariah et al., 2022). Quality of life is the level of well-being that a person experiences in their

daily life, which encompasses various dimensions, including emotional, social, and physical aspects that are interrelated in their life (Pujiwati et al., 2023).

The quality of life of people with DMT2 can be influenced by various factors, one of which is self-care. For people with diabetes mellitus, self-care is an important part of disease management that must be carried out independently as a form of personal responsibility. Regular and controlled self-care can help reduce the risk of complications, so that patients remain able to carry out their daily activities optimally. An individual's ability to manage their self-care effectively has also been shown to play a role in reducing morbidity and mortality rates, while also having a positive impact on patients' quality of life and productivity levels (R. Dewi et al., 2022). Another factor that affects the quality of life of people with DMT2 is family support. Families who are able to provide good support to their members are one of the factors that can improve the quality of life of people with DMT2. This support makes patients feel that they are not alone because their families always listen to their complaints, remind them to take their medication, provide information related to diabetes, and help them financially. Patients who receive continuous attention and care from their families will feel safer and calmer, which is believed to reduce anxiety and tension that often cause a decline in the quality of life of patients (R. Dewi et al., 2024).

Dietary adherence contributes to the quality of life of people with DMT2. Adherence to a diet is a positive behavioral change that helps maintain blood sugar levels within normal limits. For diabetes patients, diet therapy according to instructions, including antidiuretic therapy and insulin therapy, is highly recommended. Dietary patterns must be sustained in terms of calorie intake, composition, and meal timing restrictions. Nutritional management for diabetes patients generally aims to maintain optimal health (Siregar et al., 2022). Self-efficacy is another factor that can affect the quality of life of people with DMT2. High self-efficacy will encourage individuals to exhibit positive behavior in their lives and increase their confidence in facing various situations in order to achieve their desired goals. This belief influences adherence to the therapy or treatment program being undertaken. This is reflected in adherence to dietary restrictions as recommended by a doctor, physical activity or exercise, blood sugar monitoring, and regular medication intake, thereby maintaining and improving the patient's quality of life (Nurbayanti et al., 2023). This study presents a new perspective by placing the quality of life of DMT2 patients as a result of the interaction between the factors of self-care, family support, diet adherence, and self-efficacy. Unlike previous studies, which generally only examined variables partially, this study analyzed all four variables simultaneously to provide a more comprehensive understanding. The purpose of this study was to determine the factors that affect the quality of life of DMT2 patients.

METHOD

The design used was quantitative research with a cross-sectional approach. The study was conducted at a community health center in Sukabumi City from February to August 2025. The population consisted of 229 people with DMT2, with a sample size of 147 people calculated using the Slovin formula. The sampling technique used was proportional random sampling. The inclusion criteria applied were that patients were able to write, read, understand Indonesian, were at least 18 years old, and had had DMT2 for ≥ 1 year. The exclusion criteria applied were patients who had physical limitations such as visual impairment and suffered from other chronic disease complications.

The instrument used was a questionnaire, with the following validity and reliability test results: The Indonesian version of the Hensarling Diabetes Family Support Scale (HDFSS) was reported to have adequate internal consistency (Cronbach's $\alpha \approx 0.72$) (Mahardika & Suryantara, 2024). The Indonesian version of the Diabetic Management Self-Efficacy Scale (DMSSES) showed a Cronbach's α of 0.93, a composite reliability value > 0.70 , and factor loadings > 0.50 on all items (Marlina et al., 2024). Diabetes Quality of Life (DQOL) was tested using Cronbach's α total of

0.85–0.92, Kaiser-Meyer-Olkin value > 0.80 , and factor loading > 0.40 in exploratory factor analysis (Azmiardi & Febrinasari, 2025). Summary of Diabetes Self-Care Activities (SDSCA) have Cronbach's α values of 0.70–0.82 for the main domains and an intraclass correlation coefficient of 0.76 in the two-week test–retest (Maghalian et al., 2025). The Perceived Dietary Adherence Questionnaire (PDAQ) through psychometric evaluation by Siddiqui et al., (2019) showed a Cronbach's α value of 0.78, an intraclass correlation coefficient of 0.79 for temporal stability.

Data analysis was performed using SPSS software version 29. Univariate data were analyzed using frequency descriptions, bivariate data using chi-square, and multivariate data using binary logistic regression. This research has passed the ethical feasibility test from the Ethics Team of the Sukabumi College of Health Sciences with number 003665/KEP STIKES SUKABUMI/2025. The implementation of this research complies with all ethical principles, with informed consent, guarantees confidentiality and anonymity of data, and upholds the principles of beneficence, non-maleficence and justice.

RESULT

Table 1.
Respondent characteristics (n = 147)

Respondent characteristics	f	%
Age (Year)		
18 – 40	22	15
41 – 60	70	47.6
> 60	55	37.4
Gender		
Male	71	48.3
Female	76	51.7
Education		
Doesn't go to school	25	17
Elementary School	32	21.8
Middle School	38	25.9
High School	40	27.2
College	12	8.2
Marital Status		
Marriage	112	76.2
Doesn't Marriage	35	23.8
Working Status		
Working	68	46.3
Doesn't Work	79	53.7
Period of Suffering from an Illness (Year)		
1 – 5	71	48.3
> 5	76	51.7

Table 1, it is known that the characteristics of respondents with type II diabetes mellitus are mostly aged 41–60 years, totaling 70 people (47.6%), female, totaling 76 people (51.7%), high school educated, totaling 40 people (27.2%), married, numbering 112 people (76.2%), unemployed, numbering 79 people (53.7%), and had suffered from the disease for > 5 years, numbering 76 people (51.7%).

Based on Table 2, it is known that most patients with DMT2 have good self-care, namely 91 people (61.9%), receive support from their families, namely 98 people (66.7%), adhere to treatment, totaling 102 people (69.4%), have high self-efficacy, totaling 104 people (70.7%), and have a good quality of life, totaling 100 people (68%).

Table 2.
Univariate Analysis

Variables	f	%
Self-Care		
Not Good	56	38.1
Good	91	61.9
Family Support		
Doesn't Support	49	33.3
Support	98	66.7
Dietary Adherence		
Not adhering to treatment	45	30.6
Adherence to treatment	102	69.4
Self-Efficacy		
Low	43	29.3
High	104	70.7
Quality of Life		
Not Good	47	32
Good	100	68

Table 3.
Cross-tabulation of Factors Related to Quality of Life in Patients with DMT2

Variables	Quality of Life				P
	Not Good		Good		
	f	%	f	%	
Self-Care					
Not Good	46	82.1	10	17.9	< 0.001
Good	1	1.1	90	98.9	
Family Support					
Doesn't Support	41	83.7	8	16.3	< 0.001
Support	6	6.1	92	93.9	
Dietary adherence					
Not Adhering to treatment	41	91.1	4	8.9	< 0.001
Adherence to treatment	6	5.9	96	94.1	
Self-Efficacy					
Low	38	88.4	5	11.6	< 0.001
High	9	8.7	95	91.3	

The results showed that there was a partial relationship between self-care, family support, dietary adherence, and self-efficacy with the quality of life of patients with DMT2 ($p < 0.001$). These results indicate that increased self-care behavior, adequate family support, dietary adherence, and higher self-efficacy independently contribute significantly to improving the quality of life of patients with DMT2. Therefore, these four factors are relevant psychosocial and behavioral determinants to be targeted in evidence-based nursing interventions.

Tabel 4.
Multivariate Analysis

Variables	B	P-Value	OR
Self-Care	2.877	0.027	17.77
Family Support	2.766	0.036	15.89
Dietary Adherence	4.176	0.004	65.11
Self-Efficacy	2.748	0.047	15.61
Constant	-18.8	< 0.001	0.000

R Square = 0.667

The results showed that there was a simultaneous relationship between self-care ($p = 0.027$, OR = 17.77), family support ($p = 0.036$, OR = 15.89), dietary adherence ($p = 0.004$, OR = 65.11) and self-efficacy ($p = 0.047$, OR = 15.61) with the quality of life of patients with DMT2. It is known that the variable with the greatest strength is dietary adherence with an odds ratio value of 65.12, which means that patients with DMT2 who have good dietary adherence are about 65 times more likely to have a good quality of life compared to patients with low adherence. The calculation of the coefficient of determination yielded an R^2 value of 0.667, meaning that 66.7% of the variation in the

quality of life of DMT2 patients can be explained simultaneously by the variables of self-care, family support, dietary adherence, and self-efficacy in the model, while the remaining 33.3% is influenced by other factors outside the model that were not examined in this study.

DISCUSSION

The results of this study indicate that there is a relationship between self-care and the quality of life of DMT2 patients. This study is in line with Fitrina et al. (2022), who stated that there is a relationship between self-care and the quality of life of DMT2 patients. This is similar to the results of the study by Siregar et al. (2022), which found that self-care is related to the quality of life of DMT2 patients. Self-care plays a very important role in maintaining the health of DMT2 patients, because the patient's ability to perform self-care optimally will have an impact on improving their quality of life. Maintaining blood sugar levels within normal limits is the main goal of self-care activities. With good management, self-care can help reduce the risk of complications from DMT2 (Lestari et al., 2024).

The results of this study indicate a significant relationship between family support and quality of life in people with DMT2. This is reinforced by the study by Zanzibar & Akbar (2023), which explains that the quality of life of people with DMT2 is influenced by family support. This study is in line with Aryanto et al. (2024), who stated that there is a relationship between family support and the quality of life of DMT2 patients. The family plays an important role in preventing feelings of loneliness and despair that often accompany chronic diseases such as diabetes. The support provided by the family is not only limited to medical aspects, but also includes emotional support that makes patients feel valued and loved, thereby contributing positively to improving their quality of life. Additionally, family involvement in the decision-making process regarding care is essential, beginning with an understanding of the condition of diabetes and its associated risks. When families are able to provide comprehensive support, both physically and emotionally, patients will feel more motivated to maintain their health independently (Rahmadhani et al., 2024).

The results showed that there was a relationship between diet adherence and quality of life in patients with DMT2. This is in line with the studies by Dewi et al. (2025) and Mardhatillah et al. (2022) which found a significant relationship between diet adherence and quality of life in patients with DMT2. Diet adherence greatly affects the quality of life of people with diabetes. By following a strict diet, a person can regulate blood glucose levels in the body. Diet, rest, and exercise must be balanced in order to achieve good health. Health is not only physical; psychological health is also very important. Psychological distress can also affect a person's physical health. Therefore, psychological health must be prioritized. When a person feels free from psychological burdens, activities and tasks will feel easier to perform (Mandias et al., 2024; Ottaviani et al., 2022).

The results showed that there was a relationship between self-efficacy and the quality of life of DMT2 patients. This is in line with previous studies by Amalia & Asnindari (2024) which states that there is a relationship between self-efficacy and the quality of life of DMT2 patients. This is supported by Dunggio et al. (2025) which states that most people with DMT2 who have high self-efficacy show excellent quality of life. People with high self-efficacy tend to be better able to consistently practice self-care behaviours, have confidence in their ability to control their illness, and show active involvement in the treatment process. This makes it clear that self-confidence in one's personal abilities not only contributes to better health decision-making, but also has a positive impact on the psychological condition of patients, which ultimately improves their overall quality of life (Sunandar et al., 2024).

Multivariate logistic regression results show that self-care, family support, dietary adherence, and self-efficacy are independently associated with the quality of life of patients with DMT2 after being simultaneously controlled in the model. Dietary adherence is the most dominant behavioral

determinant in predicting quality of life in this population. Clinically, this can be explained through pathophysiological and psychosocial mechanisms. Dietary adherence plays a direct role in glycemic stabilization, prevention of blood sugar fluctuations, and reduction of the risk of micro- and macrovascular complications, which ultimately impact the physical, emotional, and social dimensions of quality of life (Dewi et al., 2023; Firdaus et al., 2022; Motamed-Jahromi et al., 2024).

Researchers argue that simultaneous relationships can occur because self-care, family support, dietary adherence, and self-efficacy interact synergistically in shaping comprehensive diabetes management behaviors, thereby collectively improving metabolic stability and perceived control over the disease. Theoretically, self-efficacy reinforces the consistency of self-care and dietary adherence, while family support acts as an external reinforcing factor, so that the combination of these four variables collectively improves the patient's quality of life. This study has methodological limitations that need to be considered in interpreting the results, particularly because the cross-sectional design does not allow for determining temporal or causal relationships between variables, so the possibility of reverse causality cannot be eliminated. In addition, the very large odds ratio for dietary adherence also indicates the possibility of category distribution imbalance or sparse data that could affect the stability of logistic regression estimates.

CONCLUSION

It can be concluded that there is a partial and simultaneous relationship between self-care, family support, self-efficacy, and dietary adherence with the quality of life of patients with DMT2. The variable that most influences quality of life is dietary adherence. Further research is recommended using a longitudinal design with the addition of objective clinical variables such as HbA1c, disease duration, and comorbidities to clarify temporal relationships and increase the strength of inference regarding the determinants of quality of life in patients with DMT2.

ACKNOWLEDGEMENTS

The author would like to thank the Sukabumi College of Health Sciences for their support and encouragement during this research.

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