



THE FAMILY AS A DOMINANT FACTOR IN IMPROVING THE QUALITY OF LIFE OF DIABETES MELLITUS PATIENTS: A LITERATURE REVIEW

Berliana Fasha Nurusapa*, Johan Budhiana, Tara Indra Dirgantara

Bachelor of Nursing Program, Sekolah Tinggi Ilmu Kesehatan Sukabumi, Jl. Karamat, Gunung Puyuh, Gunung Puyuh
No. 36, Sukabumi, West Java 43122, Indonesia

*nurusapaberliana@gmail.com

ABSTRACT

Diabetes mellitus is a dangerous and life-threatening disease with significant morbidity and mortality rates worldwide. The lack of family role, function, and resilience has an impact on the physical and psychological aspects as well as the quality of life of patients. This study aims to determine the relationship between family factors, including family role, family function, and family resilience, in improving the quality of life of diabetes mellitus patients. This study used a literature review, reviewing 15 articles selected by the researcher from 53 articles that were assessed for suitability and obtained from searches on Google Scholar, PubMed, Science Direct, and Springer Nature Link websites and published between 2019 and 2025. The keywords used were "Family Role," "Family Functions," "Family Resilience," and "Diabetes Mellitus". The results of this study's analysis show that the role, function, and resilience of the family can help patients comply with their treatment regimen, follow a healthy diet, increase their confidence in fighting their disease, and cope with the stress and trauma experienced by patients due to diabetes mellitus. The conclusion of this study shows that family factors, including family role, family function, and family resilience, have a significant relationship with improving the quality of life of patients with diabetes mellitus.

Keywords: diabetes mellitus; family function; family resilience; family role; quality of life

How to cite (in APA style)

Nurusapa, B. F., Budhiana, J., & Dirgantara, T. I. (2026). The Family as A Dominant Factor in Improving the Quality of Life of Diabetes Mellitus Patients: A Literature Review. *Indonesian Journal of Global Health Research*, 8(4), 961–970. <https://doi.org/10.37287/ijghr.v8i4.1650>.

INTRODUCTION

Diabetes mellitus is a dangerous and life-threatening disease with significant morbidity and mortality rates globally, both in developed and developing countries (Hossain, 2024). Based on 2021 World Health Organization data, one in ten adults aged 20 to 79 years worldwide, totaling 537 million people, suffer from diabetes. This disease also causes one in five deaths, or approximately 6.7 million deaths (World Health Organization, 2021). Indonesia ranks fifth with 19.47 million people suffering from diabetes, with a prevalence of diabetes in Indonesia reaching 10.6%. It is estimated that the number of people with diabetes in Indonesia will increase to 28.57 million by 2045, which means an increase of 47% compared to 19.47 million in 2021 (Indonesian Ministry of Health, 2021).

Diabetes mellitus is a medical condition that arises due to pancreatic metabolic disorders, which is indicated by an increase in blood glucose levels or hyperglycemia due to decreased insulin production from the pancreas (Milita et al., 2021) & (Dewi et al., 2022). This disease affects millions of people worldwide, including in Indonesia, with approximately 10.7 million people suffering from it in 2023 (Indonesian Ministry of Health, 2023).

One of the impacts on people with diabetes mellitus is the effect on their quality of life (Pasha, 2021). The quality of life of people with diabetes mellitus has an impact on both physical and psychological aspects, such as sleep disturbances and excessive anxiety, which can hinder daily activities (Wati et al., 2021). The quality of life of patients with diabetes mellitus is often inseparable from family factors. Family support is crucial, particularly regarding family roles,

family functions, and family resilience. Previous studies have revealed that family factors, including family roles, family functions, and family resilience, play a very important role in improving the quality of life of patients with diabetes mellitus. The results of the study show that these three aspects of the family affect quality of life (Akbar et al., 2023; Dewi, Safitri, et al., 2024; Mulia, 2025; Sijabat et al., 2023).

One of the roles of the family in patients with diabetes mellitus is to provide support, motivation, and reassurance to patients to recover, thereby facilitating patients in making behavioral changes towards a healthier lifestyle and helping them comply with their treatment plans. People with diabetes mellitus often feel lonely in their daily lives, so they need support from their families, who can fulfill their role by becoming a source of support for people with diabetes mellitus. Families with strong resilience have a positive effect on the physical and mental health, social interactions, and environmental conditions surrounding patients, thereby improving their quality of life (Dian et al., 2025; Sriyani & Hilman, 2023; Wahyuningsih et al., 2023). The research findings from the three researchers indicate a significant relationship among these three aspects. This literature review aims to examine in depth how families can mitigate the impact of diabetes mellitus, focusing on the role, function, and resilience of families in improving the quality of life of patients with diabetes mellitus.

METHOD

This study uses a literature review based on the topic "Family factors are dominant in improving the quality of life of diabetes mellitus patients" based on the interpretation of existing literature through the PICO framework (P: Diabetes mellitus patients, I: No intervention, C: No comparison, O: Quality of life). In this study, the search strategy was carried out using databases and keywords. The databases used were Google Scholar, PubMed, ResearchGate, and Science Direct. The keywords used were "Family Role," "Family Functions," "Family Resilience," and "Diabetes Mellitus." In this study, the inclusion criteria used were articles published between 2019 and 2025, articles in Indonesian and English, providing full text: abstract, introduction, methods, results, discussion. The study search focused on the quality of life of diabetes mellitus patients. Articles that did not match the keywords and search results were excluded.

The article search stage began with screening according to the inclusion criteria, and articles that did not match the keywords and results sought were excluded. After obtaining articles that met the inclusion criteria, an assessment was conducted using the Critical Appraisal Skills Program (CASP). The literature search in this study was conducted in two stages. In the first stage: covering the period 2019-2025, articles in Indonesian and English, providing full text (abstract, introduction, methods, results, discussion); In the second stage: focusing on the quality of life of patients with diabetes mellitus. The PICO was as follows: P: Patients with diabetes mellitus, I: No intervention, C: No comparison, O: Quality of life. The search strategy was conducted through four databases, including Google Scholar, PubMed, Springer Nature Link, and Science Direct.

RESULT

The search results yielded 11.451 articles, which were then filtered and adjusted based on full text assessment to produce 15 articles. The flow diagram in this research is as follows:

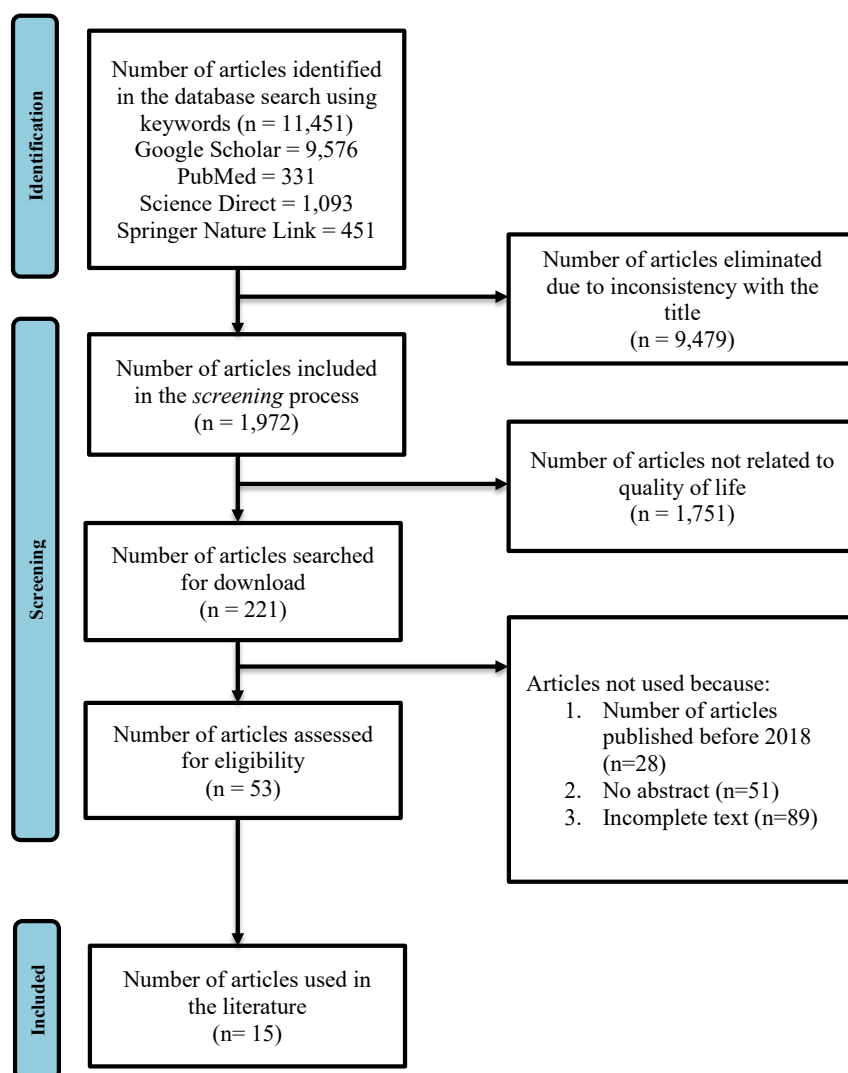


Figure 1. PRISMA flow diagram on the article selection process

Table 1.
Article Analysis

No.	Topic	Researcher	Design	Objective	Population & Sample	Results
1.	The relationship between family roles and intrinsic motivation with the quality of life of patients with type 2 diabetes mellitus (2024)	(Rahmah et al., 2024)	Cross-sectional approach	Analyzing the Relationship Between Family Role and Intrinsic Motivation with the Quality of Life of Type 2 Diabetes Mellitus Patients	55 respondents	The <i>Chi-Square</i> test results showed a p-value of 0.000 ($p < 0.05$)
2.	The relationship between family role and quality of life of type 2 diabetes mellitus patients in Senduro subdistrict, Lumajang district (2023)	(Wahyuningsih et al., 2023)	Cross-sectional approach	Understanding the relationship between family support and the quality of life of diabetes mellitus patients in the Polowijen Community Health Center service area	35 respondents	45.7% of patients had good family support, while 48.6% of the other patients had good quality of life. Sig. value (2-tailed) 0.000 < 0.05
3.	The Correlation of Family Role and	(Saudah et al., 2019)	Cross-sectional	To determine the relationship between	57 respondents	The results of the statistical test using

No.	Topic	Researcher	Design	Objective	Population & Sample	Results
	Quality of Life (QOL) of Diabetes Mellitus Patients (2019)		<i>analytic</i>	the role of families and the quality of life (QOL) of diabetes mellitus patients.		Spearman showed a P value $(0.046) < P(0.05)$
4.	The role of family in improving the management of diabetes mellitus patients (2024)	(Lontaan et al., 2024)	<i>Quasi-experimental design</i>	Investigating the role of family in improving the management of diabetes mellitus patients	20 respondents	The role of family is very important in improving diabetes mellitus patient management (adhering to a healthy diet, following treatment regimens, maintaining an active lifestyle, emotional support) with results before testing the intervention group and control group p-value 0.028 ($p < 0.05$)
5.	Factors associated with quality of life among elderly patients with type 2 diabetes mellitus: the role of family caregivers (2024)	(Zan et al., 2024)	<i>Cross-sectional study</i>	Investigating the relationship between caregivers' sense of coherence, caregiver competence, and quality of life in patients with type 2 diabetes mellitus	392 respondents	The results of the correlation analysis show that quality of life is negatively correlated with sense of coherence ($r = -0.344$, $P < 0.01$) and positively correlated with caregiver competence ($r = 0.522$, $P < 0.01$).
6.	The relationship between family function and quality of life in patients with diabetes mellitus (2023)	(Sriyani & Hilman, 2023)	<i>Cross-sectional study</i>	To determine the relationship between family function and quality of life in diabetes mellitus patients in the working area of the Parungponteng Community Health Center, Tasikmalaya Regency (2023)	40 respondents	P-value 0.013 (< 0.05)
7.	Function of family of origin and current quality of life: exploring the mediator role of resilience in Chinese patients with type 2 diabetes (2020)	(Jia et al., 2020)	<i>Cross-sectional design</i>	Examining the relationship between family of origin function, resilience, and current quality of life in a sample of Chinese patients with type 2 diabetes mellitus	300 respondents	Quality of life was significantly regressed on family function ($\hat{y} = \hat{y} .170$, $p < 0.001$)
8.	Patient assessment of family function, glycemic control, and quality of life in patients with type 2 diabetes with	(Bennich et al., 2019)	<i>Cross-sectional design</i>	Determining whether family function affects glycated hemoglobin and quality of life in patients with type 2	127 respondents	Family function is not associated with glycemic control, but is associated with the quality of life of diabetes

No.	Topic	Researcher	Design	Objective	Population & Sample	Results
	incipient complications (2019)			diabetes mellitus		mellitus patients
9.	Effects of family support system on the self-management behavior of patients with T2DM: a multi-center cross-sectional study in community settings (2024)	(Zhu et al., 2024)	<i>Cross-sectional</i>	To investigate the impact of the family support system on the self-management behavior of patients with type 2 diabetes mellitus (T2DM)	1,042 respondents	There is significant room for improvement in self-management behavior among T2DM patients in China. Family functions can enhance self-management behaviors of T2DM patients by promoting family support, thereby significantly impacting their quality of life
10.	The role of family functions on the quality of life of type 2 diabetes mellitus patients in primary service facilities of puskesmas Medan Johor (2025)	(Nasution & Napiah, 2025)	<i>Cross-sectional</i>	Analyzing the relationship between family functions and the quality of life of type 2 diabetes mellitus patients at the Medan Johor Community Health Center	70 respondents	Most family functions were classified as highly functional. However, there was no relationship between APGAR scores and quality of life in the four domains (physical health, psychological health, social relationships, and environment).
11.	Health-related quality of life of preschool-aged children with type 1 diabetes in the context of family and maternal functioning (2021)	(Luk'acs et al., 2021)	<i>Cross-sectional</i>	Comparing generic health-related quality of life (HRQoL) in young children with type 1 diabetes with that of healthy children of the same age in the context of family functioning and maternal psychological well-being	113 respondents	Maternal depression symptoms and family functioning significantly influence children's health-related quality of life (HRQoL) regardless of the presence or absence of diabetes. Parents of children with type 1 diabetes are able to manage the burden of diabetes well and integrate it into their daily family life. Families can function well, and young children can live in the same way as their healthy peers
12.	The relationship between family resilience and the	(Dian et al., 2025)	<i>Cross-sectional study</i>	To determine whether there is a relationship between family	82 respondents	The p-value for family resilience and quality of life

No.	Topic	Researcher	Design	Objective	Population & Sample	Results
	quality of life of elderly diabetes mellitus patients at Sambas Regional General Hospital (2025)			resilience and the quality of life of elderly patients with diabetes mellitus.		was 0.001 ($p < 0.005$)
13.	Family support and quality of life of diabetes mellitus patients treated at community health centers (2021)	(Jais et al., 2021)	<i>Cross-sectional</i>	To determine whether there is a relationship between family support and the quality of life of diabetes mellitus patients	227 respondents	Most DM patients (64.3%) had a good quality of life. Factors associated with the quality of life of diabetes mellitus patients were emotional, instrumental, and informational support
14.	The correlation between resilience and quality of life in type 2 diabetes mellitus patients with chronic complications (2024)	(Wardika et al., 2024)	<i>Cross-sectional</i>	Analyzing the correlation between resilience and quality of life in type 2 diabetes mellitus patients with chronic complications	35 respondents	Analyzed using Pearson Product Moment ($p < 0.05$). The results showed that the average resilience score was 63.06 (± 12.47), while the average quality of life score was 72.46 (± 11.78). There was a positive and strong correlation between resilience and quality of life ($p = 0.000$; $r = 0.782$).
15.	Support family relationship with quality life of a diabetic mellitus patient at eshmun hospital (2025)	(Rima et al., 2025)	<i>Cross-sectional</i>	To examine the relationship between quality of life and family support for diabetic patients at Eshmun Regional General Hospital	50 respondents	The quality of DM patients correlates with emotional support ($p=0.001$), the quality of life of DM patients correlates with instrumental support ($p=0.000$), the quality of life of DM patients correlates with informational support ($p=0.802$), and the quality of life of DM patients correlates with evaluative support ($p=0.020$). Thus, there is a relationship between family support and the quality of life of diabetes mellitus patients ($p\text{-value} < 0.05$). Good family support, such as

No.	Topic	Researcher	Design	Objective	Population & Sample	Results
						emotional, instrumental, evaluative, and informational support, has been proven to have a positive effect on the quality of life of patients.

DISCUSSION

Family support greatly affects quality of life, because with a lot of support from the family in the form of roles, functions, and family resilience, it is clear that it can improve the quality of life of patients with diabetes mellitus. This clarity can be seen based on 15 articles that have been reviewed regarding family support, which state that the roles, functions, and resilience of the family can improve the quality of life of patients with diabetes mellitus. The roles of the family referred to are as coordinators, motivators, and contributors to patients, the function of the family as caregivers for patients in their daily lives, and family resilience in providing emotional, social, informational, and financial support, so that they can overcome stress and trauma and provide the ability to heal and develop after the patient suffers from diabetes mellitus.

Rahmah et al. (2024) in their research stated that the role of the family as a motivator is the highest indicator in improving quality of life. The motivation provided by the family can help patients manage their diet, drinks, exercise, and take patients to health services, which can convince patients to recover and carry out activities normally, thereby improving their quality of life Wahyuningsih et al. (2023).

The quality of life of patients with diabetes mellitus is influenced by family functioning when the patient is still a child. Adolescents who grow up in families experiencing chronic difficulties are more likely to experience social difficulties and emotional problems and are unable to effectively cope with various difficulties. The negative influence of an unfavorable family environment on adolescents can be long-term and continue throughout their lives, thereby reducing their quality of life, especially when facing certain difficulties or pressures such as suffering from diabetes mellitus Jia et al. (2020). Sriyani & Hilman (2023) state that diabetes mellitus patients who are in a family environment and cared for by their family members can feel safe and comfortable, which will motivate them to carry out self-care. The feelings of safety and comfort experienced by diabetes mellitus patients arise from emotional, instrumental, and informational support from their families, which prevents stress and reduces anxiety, thereby improving the quality of life of diabetes mellitus patients.

Dian et al. (2025) state that resilient families have the ability to provide comprehensive assistance to the elderly, including emotional, social, informational, and financial support. These various forms of support greatly assist the elderly in carrying out their health routines, such as taking medication regularly, maintaining a healthy diet, and engaging in consistent physical activity. With this support, the elderly can experience an improvement in their quality of life. The support provided by families in the form of emotional, instrumental, and informational support can help patients reduce stress, increase self-esteem, boost morale, and help patients manage their condition, thereby improving the quality of life of patients with diabetes mellitus Jais et al. (2021) & Rima et al. (2025).

Research conducted by Nasution & Napiah (2025) states that there is no relationship between family function and the quality of life of diabetes mellitus patients, even though all family functions

are classified as highly functional. In this study, both groups had almost the same proportion of "good" quality of life, with "very good" quality of life only reported by patients in the highly functional group. Therefore, no relationship was found between family function and the quality of life of patients with diabetes mellitus in this study.

Families that have good roles and functions for patients with diabetes mellitus will help them in self-management, thereby helping patients to follow a healthy diet, comply with treatment regimens, maintain an active lifestyle, and adhere to their diet. Thus, with good self-management, their quality of life will improve Lontaan et al. (2024) & Zhu et al. (2024).

A high quality of life was found in almost all respondents who had good family support. The support provided had an effect on diabetes mellitus patients, such as helping them adapt quickly to the disease, reducing tension, adhering to treatment regimens, coping with stress, and increasing patients' confidence in fighting their disease. These results clearly show that the role, function, and resilience of the family are crucial in efforts to improve the quality of life of diabetes mellitus patients, so that family factors significantly influence changes in the quality of life of diabetes mellitus patients Aryanto et al. (2024) & Dewi et al. (2024).

CONCLUSION

Based on the synthesis of the fifteen journals, it can be concluded that family support in the form of roles, functions, and resilience is an important domain that influences the quality of life of diabetes mellitus patients.

REFERENCES

- Akbar, M. A., Studi, P., Baturaja, D. K., Palembang, P. K., & Keperawatan, P. S. D. (2023). Family support and quality of life in type II diabetes mellitus patients. 8(1). <https://doi.org/https://doi.org/10.52235/cendekiamedika.v8i1.227>
- Aryanto, T. A., Pujiastuti, N., & Hidayah, N. (2024). The relationship between family support and the quality of life of diabetes mellitus patients in the applied nursing undergraduate program in Malang, Malang Ministry of Health Polytechnic. 9(1), 63–72. <https://doi.org/http://dx.doi.org/10.30829/jumantik.v9i1.16986>
- Bennich, B. B., Munch, L., Egerod, I., Konradsen, H., Ladelund, S., Knop, F. K., Vilsbøll, T., Røder, M., & Overgaard, D. (2019). Patient assessment of family function, glycemic control, and quality of life in patients with type 2 diabetes with incipient complications. *Canadian Journal of Diabetes*. <https://doi.org/https://doi.org/10.1016/j.jcjd.2018.09.002>
- Dewi, R., Rahayu, N., Sanjaya, W., Arsyi, D. N., & Budhiana, J. (2022). The effect of health education on diet compliance among patients with diabetes mellitus in the Sukaraja Public Health Center's work area in Sukabumi Regency. 8(June). <https://doi.org/10.33755/jkk>
- Dewi, R., Safitri, R. A., Budhiana, J., Arsyi, D. N., & Fatmala, S. D. (2024). Factors affecting quality of life of type 2 diabetes mellitus patients in the UPTD working area of Sukabumi PHC. 20(9), 83–87. <https://doi.org/https://doi.org/10.47836/mjmhs.20.2.12>
- Dewi, R., Suherman, R., Oktaviani, Y., Melinda, F., & Budiana, J. (2024). The relationship between family support and self-care with the quality of life of type 2 diabetes mellitus patients. 5(01), 41–48. <https://doi.org/10.34305/jnpe.v5i1.1349>
- Dian, L., Florensa, & Anggreini, Y. (2025). The relationship between family resilience and the quality of life of elderly people with diabetes mellitus at the Sambas Regional General Hospital. 7(1). <https://doi.org/https://doi.org/10.53399/knj.v7i1.320>
- Hossain, J. (2024). Diabetes mellitus, the fastest growing global public health concern: early detection should be focused. 5–9. <https://doi.org/https://doi.org/10.1002/hsr2.2004>

- Jais, M., Tahlil, T., & Susanti, S. S. (2021). Family support and quality of life of diabetes mellitus patients treated at community health centers. 5, 82–88. <https://doi.org/https://doi.org/10.31539/jks.v5i1.2687>
- Jia, G., Li, X., Chu, Y., & Dai, H. (2020). Function of family of origin and current quality of life: exploring the mediator role of resilience in Chinese patients with type 2 diabetes. <https://doi.org/https://doi.org/10.1007/s13410-020-00894-5>
- Ministry of Health of the Republic of Indonesia. (2021). Situation and analysis of diabetes in Indonesia. Center for Health Data and Information, Ministry of Health of the Republic of Indonesia. <https://kemkes.go.id/id/home>
- Ministry of Health of the Republic of Indonesia. (2023). Key findings of the 2023 Indonesian Health Survey (SKI). Health Policy and Development Agency, Ministry of Health of the Republic of Indonesia. Health Policy and Development Agency, Ministry of Health of the Republic of Indonesia. <https://www.badankebijakan.kemkes.go.id/hasil-ski-2023/>
- Lontaan, A., Adam, Y., Keintjem, F., & Sumiyati, S. (2024). The role of family in improving the management of diabetes mellitus patients. 2(2), 33–40. <https://doi.org/https://doi.org/10.61099/junedik.v2i2.43>
- Lukacs, A., Zagraj, V. B., Kovacs, A. B., Soos, A., Sok, A. T., & Barkai, L. (2021). Health-related quality of life of preschool-aged children with type 1 diabetes in the context of family and maternal functioning. 0(0), 1–11. <https://doi.org/10.1177/1367493521995320>
- Milita, F., Handayani, S., & Setiaji, B. (2021). The incidence of type II diabetes mellitus in the elderly in Indonesia (analysis of Riskesdas 2018). 17, 9–20. <https://doi.org/https://doi.org/10.24853/jkk.17.1.9-20>
- Mulia, M. (2025). The relationship between family support and quality of life in type 2 diabetes mellitus. 10(1), 9–14. <https://doi.org/https://doi.org/10.52822/jwk.v10i1.708>
- Nasution, & Napiah, A. (2025). The role of family functions on the quality of life of type 2 diabetes mellitus patients in primary service facilities of puskesmas Medan Johor. 5, 193–201. <https://doi.org/https://doi.org/10.51601/ijhp.v5i1.360>
- Pasha, M. (2021). Analysis of factors affecting quality of life in Prolanis (chronic disease management program) type 2 diabetes mellitus patients in several community health centers in Bandung. 4(2), 91–97. <https://doi.org/https://doi.org/10.36465/jop.v4i2.745>
- Rahmah, S., Manto, O. A. D., Tjomiadi, C. E. F., & Syahlani, A. (2024). The relationship between family role and intrinsic motivation with the quality of life of type 2 diabetes mellitus patients. 12(3), 657–666. <https://doi.org/https://doi.org/10.26714/jkj.12.3.2024.657-666>
- Rima, O. M., Debora, R., Tambunan, C. E., Hutagalung, S. R., Nurhayati, E., & Lubis, L. (2025). Supporting family relationships with the quality of life of a diabetic mellitus patient at Eshmun Hospital. 16(1), 127–132. <https://doi.org/https://doi.org/10.34035/jk.v16i1.1680>
- Saudah, N., Yuniarti, E. V., & Wulandari, E. A. (2019). The correlation of families role and the quality of life (qol) of diabetes mellitus patients. 6(April), 6–13. <https://doi.org/https://doi.org/10.26699/jnk.v6i1.ART.p006-013>
- Sijabat, F., Siregar, R., & Barus, D. J. (2023). The relationship between family support and the quality of life of elderly people with type II diabetes at the Baktiraja Community Health Center, Humbang Hasundutan. 8(1), 37–45. <https://doi.org/https://doi.org/10.51544/jmkm.v8i1.4233>
- Sriyani, Y., & Hilman, M. (2023). The relationship between family function and the quality of life of diabetes mellitus patients. 11(1), 1–8. <https://doi.org/https://ejurnal.ars.ac.id/index.php/keperawatan/article/view/885>
- Wahyuningsih, S., Yunita, R., Hartono, D., Marfuah, & Alfarizi, M. (2023). The relationship between family roles and the quality of life of type 2 diabetes mellitus patients in Senduro subdistrict, Lumajang district. 11(2), 77–86. <https://doi.org/https://doi.org/10.33508/ners.v11i2.5084>

- Wardika, I. J., Widayati, N., & Ridla, A. Z. (2024). The correlation between resilience and quality of life in type 2 diabetes mellitus patients with chronic complications. 4(2), 150–158. <https://doi.org/https://doi.org/10.53713/nhsj.v4i2.311>
- Wati, F. R., Afiani, N., & Qodir, A. (2021). The relationship between medication adherence and quality of life in hypertensive patients with diabetes mellitus. 2, 28–34. <https://doi.org/https://doi.org/10.33475/mhjns.v2i2.46>
- World Health Organization. (2021). Global report on diabetes. France: World Health Organization. World Health Organization. <https://www.who.int/publications/i/item/9789241565257>
- Zan, H., Meng, Z., Li, J., Zhang, X., & Liu, T. (2024). Factors associated with quality of life among elderly patients with type 2 diabetes mellitus: the role of family caregivers. 1–9. <https://doi.org/https://doi.org/10.1186/s12889-024-17917-z>
- Zhu, L., Pan, Z., Shen, F., Shen, Y., & Zhang, W. (2024). Effects of family support system on the self-management behavior of patients with T2DM: a multi-center cross-sectional study in community settings. 41(February), 114–122. <https://doi.org/https://doi.org/10.1093/fampra/cmae010>