

## Original Research/Systematic Review

# Improving Quality of Life in Type II Diabetes Through Self-Care and Family Support

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### ABSTRACT

**Background:** Global and national data indicate an increasing trend in diabetes mellitus (DM) cases, including in Padang City, where the Belimbing Community Health Center recorded the highest number of type II DM patients in 2023. Several previous studies have reported a low quality of life among patients, prompting this study to explore similar trends and serve as a basis for future improvements. This study aims to examine the relationship between self-care and family support and the quality of life of patients with type II diabetes in the working area of the Belimbing Community Health Center.

**Methods:** This quantitative, cross-sectional study was conducted from December to June 2025. The population included 468 type II DM patients treated at the health center between August and October. A total of 88 respondents were selected through cluster random sampling. Data were collected using the SDSCA, HDFSS, and WHOQOL-BREF questionnaires, and analyzed using univariate and bivariate analysis with the Chi-Square test.

**Results:** The findings showed that 47.7% of patients had poor self-care, 15.9% received insufficient family support, and 50.0% had a poor quality of life. A significant relationship was found between self-care ( $p = 0.00$ ) and family support ( $p = 0.001$ ) and the quality of life of patients.

**Conclusion:** Community health centers are encouraged to organize productive community-based activities and provide education and informational media to families in order to support patient care and enhance self-care management

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## INTRODUCTION

Diabetes mellitus (DM) is a condition characterized by elevated blood glucose levels due to the body's inability to produce or utilize insulin effectively (Maulana, 2021). There are several types of diabetes, including type I, type II, gestational diabetes, and other forms. Among these, type II diabetes mellitus is the most prevalent, accounting for approximately 90–95% of all cases (Kepmenkes, 2020).

According to the International Diabetes Federation (IDF, 2021), there were 463 million people aged 20-79 years living with diabetes world wide in 2019, with a prevalence rate of 9.3%. This number is projected to rise to 643 million by 2030 and 783 million by

2045. The highest prevalence is found in the 65–79 age group, reaching 19.9%. In Indonesia, the Indonesian Health Survey (SKI, 2023) reported an increase in diabetes prevalence from 1.5% in 2018 to 1.7% in 2023 across all age groups, and from 2.0% to 2.2% among individuals aged  $\geq 15$  years. In West Sumatra, the prevalence has remained steady at 1.2% for all ages and 1.6% for those aged  $\geq 15$  years. Without appropriate intervention, diabetes cases in this region may exceed the national average, highlighting the need for preventive efforts.

According to the Padang City Health Profile, the number of diabetes mellitus (DM) cases has continued to increase annually, from 13,519 cases in 2021 to 13,733 in 2022, and 13,946 in 2023. The Belimbing Community Health Center reported the highest number of patients, with 1,058 cases in 2023 (Dinas Kesehatan Kota Padang, 2024). The consistently high number of diabetes cases in Padang City is a serious public health concern, as inadequate management may significantly impair patients' quality of life.

Quality of life is a holistic reflection of how individuals perceive their functioning in daily life (Setyo, 2020). According to Martin Seligman (2005), one of the keys to happiness is having a meaningful life, which involves contributing to others (Sarmadi, 2018). The World Health Organization defines quality of life through four dimensions: physical health, psychological well-being, social relationships, and environment (Nursalam, 2020). Among individuals with diabetes mellitus, quality of life is reflected in feelings of satisfaction and well-being that enable them to remain productive and feel useful to others (Syatriani, 2023). Several factors influence the quality of life in diabetes patients, including age, gender, socioeconomic status, psychological condition, disease complications, self-care, and family support (Syatriani, 2023).

Various studies in Padang City have shown that most patients with type II diabetes mellitus tend to have a low quality of life. A study by (Kardela et al., 2022) at the Andalas Community Health Center reported that only 36% of patients had a high quality of life. A study by (Despitassari et al., 2022) at the same location showed that 52.2% of patients experienced a poor quality of life. A study conducted by (Fadilla Ramadhani, 2023) at the Polyclinic of Dr. Reksodiwiryo Type III Hospital found that 66.7% (56 respondents) of patients had a low quality of life. These findings indicate a consistent trend of poor quality of life among type II DM patients across various healthcare facilities in Padang. Therefore, research at the Belimbing Community Health Center is necessary to determine whether the same pattern exists, and to serve as a foundation for comprehensive efforts to improve patient quality of life in the area.

A preliminary interview conducted on December 31, 2024, with 10 diabetes patients at the Belimbing Community Health Center revealed that 3 patients felt their voices were not heard and perceived themselves as burdens to their families; 4 experienced sleep disturbances, and 6 felt bored with their illness factors that could potentially reduce their quality of life. In terms of self-care, 5 patients had poor dietary habits, 7 engaged in limited physical activity, 8 were unaware of foot care, 6 were non-adherent to medication, and 8 did not regularly monitor their blood glucose levels. Regarding family support, only 5 patients were occasionally accompanied to the health center, while the rest came alone. Patients also reported a lack of family motivation in encouraging physical activity and attention to dietary habits.

Self-care is a crucial aspect in the management of type II diabetes mellitus, as an individual's ability to consistently care for themselves greatly influences long-term treatment outcomes (Morewitz, 2006). According to Orem's theory (1959), self-care involves fulfilling basic needs to maintain health and well-being (Yanto & Setyawati, 2023), including dietary regulation, blood glucose control, medication adherence, foot care, and physical activity. However, the success of self-care is closely linked to adequate family support. This support includes not only physical and emotional assistance but also the acceptance and concern that

reinforce the patient's motivation in facing the challenges of the disease (Syatriani, 2023). Given the importance of these two factors, this study raises the question: *to what extent are self-care and family support related to the quality of life of patients with type II diabetes mellitus, particularly at the Belimbing Community Health Center?*

## MATERIALS AND METHOD

This research employed a quantitative method with a descriptive correlational design and a cross-sectional approach. It was conducted in the working area of the Belimbing Community Health Center (Kuranji, Gunung Sarik, and Sungai Sapih subdistricts) from December to June 2025. Data collection took place from February 15–16 and March 24–April 15, 2025. The study population consisted of 468 patients with type II diabetes who received treatment at the Belimbing Community Health Center between August and October 2024. A total of 88 participants were selected through cluster random sampling.

The inclusion criteria were: patients aged 26–65 years with type II diabetes, living with family, literate, and willing to participate. Patients who withdrew from participation were excluded from the study. Data were collected using the SDSCA, HDFSS, and WHOQOL-BREF questionnaires. Univariate analysis was conducted using frequency distributions, and bivariate analysis was performed using the Chi-square test. A p-value of  $\leq 0.05$  was considered statistically significant.

## RESULTS

The research findings on respondent characteristics, including gender, age, socioeconomic status, and diabetes complications, are presented in Table 1.

**Table 1. Frequency Distribution of Research Respondent Characteristics**

Characteristics	Category	frequency	Percentage (%)
Gender	Male	23	26,1
	Female	65	73,9
Age	Early adult	2	2,3
	Late adult	6	6,8
	Younger elderly	26	29,5
	Older elderly	54	61,4
Socioeconomics/Income	$\leq$ RP. 2.994.193	30	34,1
	$>$ RP. 2.994.193	58	65,9
Complications of diabetes	None	53	60,2
	Eye disorders	6	6,8
	Nervous disorders	4	4,5
	Hypertension	17	19,3
	Ulcers	8	9,1
Total		88	100 %

Tabel 1 showed that more than half of the respondents were female, totaling 65 individuals or 73.9%. A total of 54 respondents or 61.4% were in the older elderly age group. In terms of income, 58 respondents or 65.9 % earned more than Rp 2,994,193. Additionally, 53 respondents or 60.2% did not experience any complications.

**Table 2. Frequency Distribution of Self-Care Among Type II DM Patients in the Working Area of the Belimbing Community Health Center in Padang City**

Self-Care	frequency (f)	Percentage (%)
Adequate Self-Care	46	52,3
Inadequate Self-Care	42	47,7
<b>Total</b>	<b>88</b>	<b>100</b>

Table 2 showed that nearly half of the respondents, specifically 42 individuals (47.7%), demonstrated poor self-care.

**Table 3. Frequency Distribution of Family Support for Type II DM Patients in the Working Area of the Belimbing Community Health Center in Padang City**

Family support	frequency (f)	Percentage (%)
Adequate	74	84,1
Inadequate	14	15,9
<b>Total</b>	<b>88</b>	<b>100</b>

Table 3 showed that a small proportion of respondents, namely 14 individuals (15.9%), received inadequate family support.

**Table 4. Frequency Distribution of Quality of Life in Patients**

Quality of life	frequency (f)	Percentage (%)
Good quality of life	44	50,0
Poor quality of life	44	50,0
<b>Total</b>	<b>88</b>	<b>100</b>

Table 4 showed that half of the respondents, specifically 44 individuals (50.0%), were found to have a poor quality of life.

**Table 5. The Relationship Between Self-Care and Quality of Life in Patients with Type II Diabetes Mellitus in the Working Area of Belimbing Health Center, Padang City**

Mentus in the Working Area of Benihising Health Center, Padang City							
Self-Care	Quality of life						p VALUE
	Good		Poor		Total		
	f	%	f	%	f	%	
Adequate Self-Care	38	82.6	8	17.4	46	100	0.000
Inadequate Self-Care	6	14.3	36	85.7	42	100	
<b>Total</b>	<b>44</b>	<b>50.0</b>	<b>44</b>	<b>50.0</b>	<b>88</b>	<b>100</b>	

Table 5 showed that most patients with adequate self-care had a good quality of life (82.6%), while only a small proportion (17.4%) had a poor quality of life. Conversely, the majority of patients with inadequate self-care had a poor quality of life (85.7%), and only a few (14.3%) had a good quality of life. The Chi-square test showed a p-value of 0.000 ( $p < 0.05$ ), indicating a significant relationship between self-care and quality of life in patients with type II diabetes mellitus in the working area of Belimbing Health Center, Padang City.

**Table 6. The Relationship Between Family Support and Quality of Life in Patients with Type II Diabetes Mellitus in the Working Area of Belimbing Health Center, Padang City**

Diabetes Mellitus in the Working Area of Benibang Health Center, Padang City							
Family Support	Quality Of life						p VALUE
	Good		Poor		Total		
	f	%	f	%	f	%	
Adequate	43	58.1	31	41.9	74	100	0.001
Inadequate	1	7.1	13	92.9	14	100	
Total	44	50.0	44	50.0	88	100	

Table 6 showed that more than half of the patients who received adequate family support had a good quality of life (58.1%), while nearly half (41.9%) had a poor quality of life. In contrast, almost all patients who received inadequate family support had a poor quality of life (92.9%), and only a small proportion (7.1%) had a good quality of life. The Chi-square test showed a p-value of 0.001 ( $p < 0.05$ ), indicating a significant relationship between family support and quality of life among patients with type II diabetes mellitus in the working area of Belimbing Health Center, Padang City.

## DISCUSSION

### Characteristics

The results showed patient characteristics, more than half of the patients were female as many as 65 people (73.9%), in line with the data (SKI, 2023) which states that the prevalence of DM is higher in women. Based on the age category, more than half of the patients were older elderly (56-65 years) as many as 54 people (61.4%). One of the impacts of the aging process is the decline in pancreatic beta cell function in producing insulin. This decline causes glucose intolerance due to impaired insulin secretion (Hans Tandra, 2017)). In terms of socioeconomics, more than half of the respondents had a monthly income above the minimum wage of Padang city in 2025, as many as 58 people (65.9%). Changes in socioeconomic status often affect the stability of diets, pushing people towards unhealthy consumption, which ultimately has a negative impact on health and nutritional status (Budiarto & Anggraeni, 2014). Regarding complications, 53 people (60.2%) did not experience DM complications, while 35 people (39.8%) experienced various complications, with hypertension being the most common, as many as 17 people (19.3%). Hypertension is related to insulin resistance that triggers sodium retention, sympathetic nerve activation, and vasoconstriction, resulting in increased blood pressure.

The results of the self-care distribution study showed that more than half of DM patients had adequate self-care, namely 46 people (52.3%). These results are in line with research by (Despitasi et al., 2022). in Type II DM patients at Puskesmas Andalas Padang City, which shows that most patients have adequate self-care, as many as 54 people (74.0%). The results of the family support distribution study showed that most DM patients were in the Adequate category, as many as 74 people (84.1%). These findings are consistent with research conducted by (Suwanti et al., 2021) at Siti Aisyah Madiun Islamic Hospital, which showed that most patients with type II diabetes had Adequate family support, amounting to 62 individuals (72.1%).

The results of the quality of life distribution study showed that out of 88 patients with diabetes mellitus (DM), 44 individuals (50%) had a good quality of life, while the remaining 44 individuals (50%) had a poor quality of life. These findings are in line with a study by (Saragih et al., 2022) conducted at Santa Elisabeth Hospital in Medan, which reported that the majority of patients with type II diabetes had a good quality of life, totaling 60 individuals (85.7%).

### **The Relationship Between Self-Care and Quality of Life in Patients with Type II Diabetes Mellitus in the Working Area of Belimbing Health Center, Padang City**

The results of the study showed that most respondents with adequate self-care had a good quality of life, totaling 38 individuals (82.6%). Meanwhile, respondents with inadequate self-care tended to have a poor quality of life, totaling 36 individuals (85.7%). The Chi-square test showed a p-value of 0.000 ( $p < 0.05$ ), indicating a significant relationship between self-care and quality of life in patients with type II diabetes mellitus in the working area of Belimbing Health Center, Padang City.

The results of this study are in accordance with the theory proposed by (Syatriani, 2023), which states that one of the factors influencing the quality of life in individuals with diabetes mellitus is self-care. Self-care refers to an individual's ability to independently manage their health condition, including adherence to blood glucose control, maintaining a healthy diet, physical activity, medication, and foot care (Yanto & Setyawati, 2023).

These findings are also consistent with a study by (Zaura et al., 2021) conducted at Jeumpa Health Center, Bireuen District, which reported a p-value of 0.000 ( $p < 0.05$ ). Another study by (Despitasi et al., 2023), conducted in Jati Subdistrict within the working area of Andalas Health Center in Padang, also showed a p-value of 0.000 ( $p < 0.05$ ). Both studies indicate a significant relationship between self-care and the quality of life of patients



with type II diabetes mellitus. Optimal self-care enables patients to manage their physical and emotional conditions more effectively.

According to the researcher's assumption, the quality of life of diabetes patients is greatly influenced by their ability to perform self-care. When self-care is carried out properly and consistently, patients tend to feel healthier, achieve better glycemic control, gain confidence, and manage their condition more effectively, which positively impacts their perception of quality of life. Conversely, patients with poor self-care are at greater risk of complications, stress, and dissatisfaction with their lives.

Although the relationship between self-care and quality of life showed significant results, there were some cases that were not directly proportional. Some patients with good self-care still have poor quality of life, possibly influenced by other factors such as complications, psychosocial conditions, or economic limitations. Conversely, there are patients with poor self-care but good quality of life, which may be helped by family support or a positive perception of life. This shows that quality of life is multifactorial and not only determined by self-care alone.

To improve the self-care of patients with type II diabetes mellitus, community health centers can organize productive community-based interventions, such as making crafts from used clothes into useful products. This activity has been shown to reduce anxiety, calm, increase self-confidence, and open up economic opportunities (Butar-Butar et al., 2022). In addition to the psychological benefits, this approach creates a social environment that supports patient engagement in daily activities. Involving family members also strengthens the effectiveness of the intervention, as emotional support and family education have been shown to promote self-care adherence (Pramita et al., 2021), making it a holistic strategy to sustainably improve patients' quality of life.

### **The Relationship Between Family Support and Quality of Life in Patients with Type II Diabetes Mellitus in the Working Area of Belimbing Health Center, Padang City**

The results of the study showed that most respondents with adequate family support had a good quality of life, totaling 43 individuals (58.1%). Meanwhile, the majority of respondents with inadequate family support had a poor quality of life, totaling 13 individuals (92.9%). The Chi-square test yielded a p-value of 0.001 ( $p < 0.05$ ), indicating a significant relationship between family support and quality of life in patients with type II diabetes mellitus in the working area of Belimbing Health Center, Padang City.

These findings are in accordance with the theory proposed by (Syatriani, 2023), which states that one of the factors influencing the quality of life in individuals with diabetes mellitus is family support. Adequate family support helps patients feel more at ease, valued, and less alone in coping with their illness (Yanto & Setyawati, 2023). The presence and involvement of family members in the care process provide strong psychological support that encourages patients to stay motivated in facing life. Conversely, when family support is lacking, patients are more vulnerable to psychological and emotional stress, which negatively impacts their quality of life.

The findings of this study are consistent with research conducted by (Hardin & Dhila, 2020) at Lubuk Begalung Health Center in Padang, which showed a p-value of 0.011 ( $p < 0.05$ ). Another study by (Suwanti et al., 2021) at Siti Aisyah Islamic Hospital in Madiun reported a p-value of 0.000 ( $p < 0.05$ ). These studies indicate a significant relationship between family support and the quality of life of patients with type II diabetes mellitus.

The researcher's assumption in this study is that the quality of life of diabetes patients is influenced by the presence and role of the family in the care process. When patients feel supported, they are more motivated to maintain their health condition. On the other hand, a lack of support can lead to stress, hopelessness, and a decline in quality of life. Therefore, the

family's role is a critical factor that cannot be overlooked in managing chronic illnesses such as diabetes.

Although the relationship between family support and quality of life showed significant results, there were some cases that were not directly proportional. There were patients with adequate family support but poor quality of life, which may be due to other factors such as complications, psychological stress, smoking status, education, or gender. Conversely, there are also patients with inadequate family support but have a good quality of life, which may be influenced by a high level of independence or good coping. These findings suggest that quality of life is multidimensional.

In addition, the researcher considered that family type might influence the form and intensity of support provided to patients. Based on the collected data, more than half of the respondents came from nuclear families (72.7%), while the rest were from extended families (27.3%). Nuclear families typically consisting of father, mother, and children—tend to have more focused and intense interactions, allowing for more direct and consistent support. In contrast, extended families, although larger in size, often distribute roles and responsibilities among more members, which may affect the quality of support received by the patient.

This is in line with the theory proposed by Mubarak (2009), which states that the structure, type, and functions of a family have a significant impact on the health of each family member—both physical and mental. Conversely, a person's health status can also influence the structure, type, and function of the family (Wahid Iqbal Mubarak & Chayatin, 2009).

Efforts to improve family support can be made through the distribution of leaflets containing information about the family's role in caring for patients with type II diabetes mellitus physically, emotionally, socially, and spiritually. These leaflets can be distributed during visits to the health center or through home visits, accompanied by direct education from healthcare providers to strengthen understanding. This strategy is expected to encourage active family involvement in care, which in turn may positively impact the patient's quality of life.

## CONCLUSION

There is a significant relationship between self-care and quality of life ( $p$ -value = 0.00), as well as between family support and quality of life ( $p$ -value = 0.001) in patients with type II diabetes mellitus in the working area of Belimbing Health Center, Padang City. It is recommended that the health center enhance the capacity of healthcare workers through training on quality of life for type II diabetes patients, conduct regular education sessions on self-care and stress management, and organize supportive activities such as exercise and guided relaxation.

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