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Self-Care Management and Quality of Life among Patients with Type 2 Diabetes Mellitus

Lola Amaliah[1], Lukmanulhakim[2*]

[1]Faculty of Health Sciences, Universitas Faletehan, Serang, Indonesia
Email: amaliahlola18@gmail.com
[2]Faculty of Health Sciences, Universitas Faletehan, Serang, Indonesia
Email: lukmanulhakim02ners@gmail.com

**Corresponding author: Lukmanulhakim, Universitas Faletehan. Email: lukmanulhakim02ners@gmail.com*

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Abstract
Type 2 Diabetes Mellitus (DM) is a chronic disease with a continuously increasing prevalence and can reduce patients' quality of life. Poor self-care management, including dietary regulation, physical activity, blood glucose monitoring, and medication adherence, remains a challenge in disease management. This study aimed to determine the relationship between self-care management and quality of life among patients with Type 2 DM. This quantitative study used a cross-sectional design. A total of 47 respondents were selected using purposive sampling. Data were collected using the self-care management questionnaire and the Diabetes Quality of Life (DQOL) questionnaire and were analyzed using the Chi-Square test. The results showed that 27 respondents (57.4%) had good self-care management and 20 respondents (42.6%) had poor self-care management. A total of 19 respondents (40.4%) had good quality of life, while 28 respondents (59.6%) had poor quality of life. The bivariate analysis yielded a p-value of 0.001 with an OR of 15.300. The statistical test results showed a significant relationship between self-care management and quality of life among patients with Type 2 DM. Patients with good self-care management had a 15.300-fold greater likelihood of having a good quality of life than patients with poor self-care management. Community health centers are expected to improve education on self-care management to help enhance patients' quality of life.

Keywords: Type 2 Diabetes Mellitus, Self-Care Management, Quality of Life.

Introduction

Diabetes Mellitus (DM) is one of the non-communicable diseases that has become a global public health problem because its prevalence continues to increase

from year to year. The disease is characterized by chronic hyperglycemia caused by impaired insulin secretion, impaired insulin action, or a combination of both, which can lead to damage to various organs if not managed optimally[1]. The International Diabetes Federation (IDF) identified that in 2025, approximately 589 million adults aged 20–79 years were living with diabetes worldwide, and this number is projected to increase to 853 million by 2050[5].

Type 2 Diabetes Mellitus is the most common form of diabetes, accounting for approximately 90–95% of all diabetes cases. The disease is generally associated with insulin resistance influenced by various factors, such as age, obesity, unhealthy dietary patterns, and insufficient physical activity[15]. The World Health Organization (WHO) also states that changes in modern lifestyles are among the main causes of the increasing prevalence of Type 2 Diabetes Mellitus in various countries[15].

In Indonesia, Diabetes Mellitus is an increasingly important health problem. The results of the 2023 Indonesian Health Survey (SKI) showed that the prevalence of diabetes among people aged ≥15 years increased compared with previous years[7]. This condition indicates that diabetes remains a challenge for health services because it can increase morbidity, mortality, and healthcare financing burdens if not managed optimally.

Type 2 Diabetes Mellitus is a chronic disease that requires long-term management. In addition to pharmacological therapy, successful disease control is strongly influenced by patients' ability to perform self-care management. Self-care management refers to self-care behaviors that include dietary regulation, physical activity, adherence to therapy, blood glucose monitoring, and foot care. These behaviors aim to maintain blood glucose levels within the normal range, prevent complications, and improve patients' health status[10].

The concept of self-care management is supported by the Self-Care Deficit Nursing Theory developed by Dorothea Orem. This theory explains that individuals have the ability to perform self-care to maintain their health and well-being. In patients with Type 2 Diabetes Mellitus, the ability to perform self-care independently is an important factor in successful disease management; therefore, continuous education and support from healthcare professionals are needed[9].

In addition to self-care management, quality of life is an important indicator in the management of Type 2 Diabetes Mellitus. Quality of life reflects an individual's perception of physical and psychological conditions, social relationships, and the ability to perform daily activities. Patients who are able to control their disease effectively tend to have a better quality of life than patients who experience complications or have poor glycemic control[8].

Efforts to improve patients' ability to perform self-care are supported by the Diabetes Self-Management Education and Support (DSMES) program recommended by the American Diabetes Association. This program aims to improve patients' knowledge, skills, and confidence in managing their disease independently, thereby improving glycemic control and quality of life[15].

Several studies have shown that self-care management is associated with quality of life among patients with Type 2 Diabetes Mellitus. Kendek, et al. reported that patients with good self-care management had better quality of life than patients with poorer self-care abilities6. Fadli et al. also showed that improvements in self-care management behaviors had a positive effect on quality of life among patients with Type 2 Diabetes Mellitus[3]. These findings indicate that self-care is an important factor in successful diabetes management.

Based on a preliminary study conducted at Rau Community Health Center, Serang City, in March 2026, patients with Type 2 Diabetes Mellitus were still found to have not implemented self-care management optimally, including poor adherence to dietary regulation, irregular physical activity, infrequent blood glucose monitoring, and poor adherence to medication therapy. These conditions may affect patients' quality of life. Although many studies on self-care management have been conducted, research examining the relationship between self-care management and quality of life among patients with Type 2 Diabetes Mellitus at Rau Community Health Center, Serang City, remains limited; therefore, further research is needed.

Methods

The research design was correlational analytic using a cross-sectional approach, in which data are collected during a specific period and the independent and dependent variables are measured simultaneously. This design is commonly used in health research

to identify relationships between health behaviors and respondents' health conditions at the same time[18].

This study aimed to analyze the relationship between self-care management and quality of life among patients with Type 2 Diabetes Mellitus at Rau Community Health Center, Serang City, in 2026. The study population consisted of 90 patients with Type 2 Diabetes Mellitus who underwent routine follow-up at Rau Community Health Center, Serang City. A sample of 47 respondents was selected using purposive sampling based on predetermined inclusion and exclusion criteria[18]. Data were collected using the Summary of Diabetes Self-Care Activities (SDSCA) questionnaire[19] to measure self-care management and the Diabetes Quality of Life (DQOL) questionnaire[20] to measure quality of life. Data were analyzed using univariate analysis to describe the characteristics of the study variables and bivariate analysis using the Chi-Square test[21,22] with a significance level of $\alpha = 0.05$ to determine the relationship between self-care management and quality of life. This study received ethical approval from the Health Research Ethics Committee of Universitas Faletehan before the study was conducted, under ethics approval number : 003532/UNIVERSITAS FALETEHAN/2026.

Results

This study involved 47 respondents with Type 2 Diabetes Mellitus who were receiving treatment at Rau Community Health Center, Serang City, in 2026. The univariate analysis described the distribution of self-care management and quality of life among respondents, while bivariate analysis was conducted to determine the relationship between self-care management and quality of life.

Table 1

Frequency Distribution of Self-Care Management among Patients with Type 2 Diabetes Mellitus at Rau Community Health Center in 2026

No	Self-Care Management	Frequency	%
1	Poor	20	42.6 %
2	Good	27	57.4 %
	Total	47	100 %

Based on Table 1, among the 47 respondents, 27 (57.4%) had good self-care management, while 20 (42.6%) had poor self-care management.

Table 2

Frequency Distribution of Quality of Life among Patients with Type 2 Diabetes Mellitus at Rau Community Health Center in 2026

No	Quality of Life	Frequency	%
1	Poor	28	59.6 %
2	Good	19	40.4 %
	Total	47	100 %

Based on Table 2, among the 47 respondents, 19 (40.4%) had good quality of life, while 28 (59.6%) had poor quality of life.

Table 3

Relationship between Self-Care Management and Quality of Life among Patients with Type 2 Diabetes Mellitus at Rau Community Health Center, Serang City, in 2026

Self-Care Management	Quality of Life				Total		p Value	OR
	Poor		Good					
	N	%	N	%	N	%		
Poor	18	90.0%	2	10.0%	20	100.00%	0.001	15.300
Good	10	25.9%	17	74.1%	27	100.00%		
Total	28	59.6%	19	40.4%	47	100.00%		

The bivariate analysis using the Chi-Square test showed a p-value of 0.001 ($p < 0.05$), indicating a significant relationship between self-care management and quality of life among patients with Type 2 Diabetes Mellitus at Rau Community Health Center, Serang City, in 2026. The Odds Ratio (OR) of 15.300 indicates that respondents with good self-care management had approximately 15.3 times greater odds of having good quality of life than respondents with poor self-care management

Discussion

Univariate Analysis

1. Self-Care Management among Patients with Type 2 Diabetes Mellitus

The results showed that most respondents had good self-care management (57.4%). This indicates that the majority of respondents were able to implement self-care behaviors, such as adherence to medication, physical activity, and routine blood glucose monitoring. This was reflected in respondents' self-care behaviors, including light

physical exercise such as walking, routine blood glucose testing at least once a month, and taking antidiabetic medication according to the recommended dosage. These findings indicate that the majority of respondents had implemented several important components of diabetes management, namely medication adherence, periodic blood glucose monitoring, and regular physical activity. These behaviors play an important role in helping control blood glucose levels, preventing complications, and supporting optimal diabetes management.

These findings can be related to the theory proposed by Hinkle et al.[16], which states that successful management of Type 2 Diabetes Mellitus depends greatly on patients' ability to perform self-care independently. Such self-care includes adherence to medication, routine blood glucose monitoring, regular physical activity, and adoption of a healthy lifestyle. Optimal self-care management plays an important role in maintaining glycemic control and reducing the risk of diabetes-related complications.

The American Diabetes Association (ADA) explains that self-care management is a key component of diabetes management that plays a role in maintaining glycemic control, preventing complications, and maintaining patients' health[1] the explanation above is consistent with the findings of Ernawati et al.[2], who reported that the Diabetes Self-Management Education (DSME) program can improve patients' ability to perform self-care. Other studies have also reported that patients with good self-care management tend to have more optimal blood glucose control and better health status[12]. Nevertheless, some respondents still had poor self-care management (42.6%), particularly in dietary regulation and recording blood glucose test results. This condition indicates the need for continuous education and assistance so that all components of self-care management can be implemented consistently.

2. Quality of Life among Patients with Type 2 Diabetes Mellitus

Quality of life is an individual's perception of their life situation, encompassing physical health, psychological well-being, social relationships, and the environment[15]. In patients with Type 2 Diabetes Mellitus, quality of life is an important indicator for assessing the success of disease management because diabetes is a chronic disease requiring long-term care.

The results showed that most respondents had good quality of life (59.6%). This indicates that most patients were able to adapt to their disease and continue their daily activities reasonably well. This was reflected in respondents' reports of satisfaction with the time required to achieve normal blood glucose levels. The high level of satisfaction indicates that most respondents felt that the diabetes management they received had produced results consistent with their expectations, thereby supporting better physical and psychological conditions. However, some respondents felt that diabetes limited their career development or work activities. This condition indicates that although respondents' overall quality of life was categorized as good, diabetes still affected aspects of their social lives and productivity.

These findings are supported by previous studies reporting that good diabetes management is associated with higher quality of life[12]. Other research has also indicated that the quality of life of patients with diabetes is influenced by physical condition, self-care management behaviors, and social support[13].

Nevertheless, in this study, some respondents still felt that diabetes limited their careers. The findings also showed that some respondents had poor quality of life (40.4%) and reported sleep disturbances, activity limitations, and physical complaints related to diabetes. These findings indicate that diabetes management should not focus solely on blood glucose control but should also address patients' psychological and social aspects. This demonstrates that the disease affects not only physical health but also social roles, work, and productivity. This is consistent with other researchers who have explained that diabetes can cause limitations in daily activities, potentially affecting patients' social and occupational roles[17]. Therefore, efforts to improve education and provide continuous support are needed so that patients can adapt to their disease without reducing their productivity and overall quality of life.

Bivariate Analysis

3. Relationship between Self-Care Management and Quality of Life

The bivariate analysis showed a significant relationship between self-care management and quality of life among patients with Type 2 Diabetes Mellitus ($p = 0.001$). An Odds Ratio (OR) of 15.300 indicates that patients with good self-care management had 15.3 times greater odds of having good quality of life than patients

with poor self-care management. These results indicate that patients' ability to manage their disease independently plays an important role in improving quality of life.

This finding is consistent with previous research showing a significant relationship between self-care management and quality of life among patients with Type 2 Diabetes Mellitus. The study explained that patients who are able to manage their disease independently, including dietary regulation, physical activity, medication adherence, and blood glucose monitoring, tend to have better quality of life than patients with low self-care management ability[11, 14].

According to the American Diabetes Association, patients who are able to regulate their diet, engage in physical activity, adhere to therapy, and routinely monitor blood glucose levels tend to have more stable health conditions and therefore better quality of life[1]. Therefore, health education, family support, and routine monitoring by healthcare professionals need to be continuously strengthened so that patients' self-care management abilities become more optimal and can improve quality of life.

The findings of this study indicate that self-care management is an important factor associated with quality of life among patients with Type 2 Diabetes Mellitus. Therefore, efforts are needed to improve self-care management through continuous health education, counseling, family support, and routine monitoring by healthcare professionals. As patients' ability to perform self-care improves, their quality of life is expected to improve and the risk of complications to be minimized.

Conclusion

This study showed a significant relationship between self-care management and quality of life among patients with Type 2 Diabetes Mellitus at Rau Community Health Center, Serang City, in 2026. Patients with good self-care management had greater odds of having better quality of life than patients with poor self-care management. These findings emphasize that self-care behaviors, such as dietary regulation, physical activity, medication adherence, blood glucose monitoring, and foot care, are important components of Type 2 Diabetes Mellitus management.

This study contributes to the development of nursing science by strengthening evidence that improving self-care management can be an effective strategy for improving quality of life among patients with Type 2 Diabetes Mellitus, particularly in

primary healthcare settings. The findings are expected to serve as a basis for healthcare professionals in developing education and support programs focused on improving patients' self-care abilities to prevent complications and improve quality of life.

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Conflict of Interest

The researchers declare that there was no conflict of interest in the conduct of the study, preparation of the manuscript, or publication of this article. All researchers contributed scientifically according to their respective roles, and the study was not influenced by personal, commercial, or financial interests that could affect the results.

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