



The Relationship Between Self-Management and Quality of Life in Type 2 Diabetes Mellitus Patients of Productive Age

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Abstract

The increasing incidence of diabetes mellitus among individuals of productive age requires special attention, as poor self-management can reduce overall quality of life and productivity, especially in productive age groups with work, social, and family demands, which can affect adherence to self-management. Although self-management theoretically influences quality of life, the relationship between the two is still debated by researcher. This study aims to determine the relationship between self-management and quality of life in productive-age type 2 diabetes. The study used a cross-sectional design conducted from December 2024 to June 2025. The study population was 132 productive-age type 2 diabetes mellitus patients, with a sample size of 63 respondents selected through a purposive sampling technique. The instruments used were the Revised Version of Diabetes Quality of Life Instrument (DQoL) to assess quality of life and the Summary of Diabetes Self-Care Activities (SDSCA) to assess self-management. Data were analyzed univariately and bivariately. The results showed that more than half of respondents (63.5%) had a high quality of life and more than half (52.4%) had good self-management. Statistical tests using chi-square showed a p value = 0.017 ($p < 0.05$), which means there is a significant relationship between self-management and quality of life. These results indicate that the better the self-management, the higher the quality of life of productive-age type 2 diabetes patients. Therefore, it is recommended that health workers can intervene in diabetes management by paying attention to psychosocial aspects, including coping strategies, education for the social environment, and counseling to reduce the emotional burden on patients.

Keywords: Productive Age, Quality of Life, Self-Management, Type 2 Diabetes Mellitus

INTRODUCTION

Diabetes mellitus affects an individual's quality of life. Research shows that individuals with diabetes have a poorer quality of life compared to individuals without the chronic condition (Hassan et al., 2022). When diabetes is accompanied by other chronic diseases, the impact is even worse (Trikkalinou et al., 2017). Research shows that type 2 diabetes mellitus impacts not only physical health but also mental health. *Quality of Life (QoL)*/ overall quality of life (Teoli & Bhardwaj, 2024). Several previous studies that also examined QoL in diabetes mellitus patients showed that diabetes sufferers have a lower QoL compared to patients or other people who do not suffer from DM2 (Suniyadewi et al., 2023).

Research shows that the quality of life of type 2 diabetes mellitus patients remains a health issue that is often overlooked. Research conducted by Gupta et al. in India showed that as many as 34% of diabetes mellitus patients have a poor to moderate quality of life (Gupta et al., 2021). Research in Arabia found that 68% of diabetes sufferers have a poor quality of life (Alhommos et al., 2022). Meanwhile, in Indonesia, research conducted by Fithria et al. showed that in Aceh, as many as 88% of diabetes sufferers have a moderate quality



of life (Fithria et al., 2022). This is in line with research in the city of Padang, West Sumatra, which showed that 60% of diabetes patients have a very low to moderate quality of life (Kardela et al., 2022).

Poor quality of life in patients with type 2 diabetes mellitus significantly impacts various aspects of life, including physical complications such as retinopathy, nephropathy, and cardiovascular disease, and psychological complications such as stress, anxiety, and depression, as well as social isolation, which reduces social interaction and the quality of family relationships (Suniyadewi et al., 2023). Furthermore, the financial burden of medical treatment costs and decreased productivity further exacerbate the patient's condition. These impacts can increase the risk of serious complications, requiring optimal self-management to improve the patient's quality of life (Hassan et al., 2022).

Diabetes mellitus self-management is a goal-oriented individual behavior in such a way as to regulate oneself and the environment to maintain life, health, and well-being (Fadli & Uly, 2023). According to Sugiharto et.al, self-management in diabetes mellitus consists of diet management, physical activity, medication management, blood glucose control, foot care, and smoking cessation (Sugiharto et al., 2019). According to Bariyyah et.al., (2018), the results of self-management research on 536 diabetes mellitus patients in Malaysia showed that overall they had moderate self-management (67.2%) (Bariyyah et al., 2018). In addition, research in Indonesia showed that diabetes mellitus patients had moderate self-management scores (Sukarno et al., 2024).

In recent years, research assessing quality of life in individuals with diabetes and other chronic conditions has increased (Hassan et al., 2022). The progressive nature of diabetes can impair individuals' perceptions of their quality of life, while a decreased perception of quality of life can lead to poor self-care activities related to diabetes mellitus self-management (Jafari et al., 2024). Theory suggests that good self-management as a mediator can improve quality of life in patients with diabetes mellitus (Hassan et al., 2022). However, there is still debate about the relationship between self-management and quality of life in patients with type 2 diabetes mellitus.

Research showed a significant relationship between self-management and the quality of life of diabetes mellitus patients (Gamal et al., 2024). Other studies also showed a relationship between self-management and the quality of life of diabetes mellitus patients (Nooseisai et al., 2021). However, a recent systematic review study showed that of the seven articles analyzed, two studies showed no significant relationship between self-management and the quality of life of type 2 diabetes mellitus patients (Hailu et al., 2019; Wicaturatmashudi et al., 2024; Wichit et al., 2017). Other studies also found no significant relationship between self-management and the quality of life of type 2 diabetes mellitus patients (Sidiq et al., 2018).

Based on research articles that do not show a relationship between self-management and quality of life, it is known that the characteristics of the respondents assessed vary. Research found that at most 34.6% of respondents were in the elderly age category, while the remainder were in the productive age category (Sidiq et al., 2018). A study also showed varying age characteristics, with 37% elderly and 63% productive age (Hailu et al. 2019). Therefore, this has the potential to lead to research bias.

Research on the relationship between self-management and quality of life specifically in diabetes patients with specific characteristics can reduce research bias. Systematic research suggests that self-management research is limited to young adults or those of productive age (Wong et al., 2020). Those of productive age face unique challenges, such as work demands, social activities, and family responsibilities, which can influence adherence to self-management and impact overall quality of life (Qin et al., 2020). Unlike older adults, who generally have more time to focus on their health, individuals of productive age often face limited time and resources to manage their diabetes (Zhang et al., 2024).

Therefore, by specifically examining this productive age group, this study can provide a more accurate picture of how self-management affects quality of life within the context of the daily challenges they face. This study aims to determine the Relationship between Self-Management and Quality of Life in Patients with Type 2 Diabetes Mellitus of Productive Age at the Belimbing Health Center, Padang City in 2025.

METHODS

This research is quantitative research with an approach Cross sectional. The population in this study were productive-age type 2 diabetes mellitus patients (15-59 years old) who were treated at the Belimbing Community Health Center at the time of the study. The population in this study consisted of 132 productive-age type 2 diabetes mellitus patients obtained based on medical records. Researchers use the Slovin formula to determine the number of samples from the population in this study, the sampling technique uses the technique purposive sampling A sample of 63 respondents was obtained. The sample inclusion criteria in this study were: 1) Respondents who had received education about diabetes mellitus from health workers; 2) Respondents in stable condition and able to communicate well (cooperative), This was determined through direct observation; 3) Respondents who were willing to be research respondents. Meanwhile, the exclusion criteria for this study were respondents who experienced difficulty in performing physical activities due to certain conditions, such as disorders of the musculoskeletal system or the presence of comorbidities such as stroke.

The research instrument used a quality-of-life questionnaire, namely the Revised Version of the Diabetes Quality of Life Instrument (DQoL), which consists of 23 questions. This questionnaire assesses three domains: satisfaction, impact, and concern using a Likert scale of 1-5. In the satisfaction domain, it starts from 1 (very dissatisfied) - 5 (very satisfied), the impact domain 1 (never) - 5 (always), and the concern domain 1 (never) - 5 (always), so that the total score ranges from 23 to 115. Quality of life is categorized into two, namely high if the score is high if the score is ≥ 76.0 and low if the score is < 76.0 . Meanwhile, self-management behavior in type 2 DM patients is measured using a questionnaire. Summary of Diabetes Self Care Activities (SDSCA) This instrument assesses aspects of self-management, namely diet, physical activity, medication management, blood sugar monitoring, foot care and smoking status using. This questionnaire consists of 18 questions, 17 of which are assessed using a score ranging from 0-7 depending on how many days the patient performs self-management in a week. Self-management is categorized into two, namely good if the score is ≥ 62.6 and poor if the score is < 62.6 .

Data were analyzed using univariate descriptive statistics (frequency and percentage) for self-management and quality of life variables, and bivariate chi-square tests to assess their relationship.

RESULTS

The results of this study are presented in the following table.

Table 1. Distribution of Frequency of Respondents' Characteristics with Type 2 Diabetes Mellitus (n=63)

Variable	<i>f</i>	%	
Gender			
Male	23	36.5	
Female	40	63.5	
Employment Status			
Not Working	37	58.7	
Working	26	41.3	
Education			
Elementary School	17	27.0	
Junior High School	12	19.0	
Senior High School	26	41.3	
Bachelor's Degree	8	12.7	
Duration of Illness			
<5 Years	31	49.2	
6-10 Years	21	33.3	
>10 Years	11	17.5	
Variabel	Mean	SD	Min - Max
Age	52,9	5,35	32 - 59



Table 1 Shows that more than half (63.5%) of the respondents were female. More than half (58.7%) of the respondents were unemployed. Less than half (41.3%) of the respondents had a senior high school education level, and less than half (49.2%) had been suffering from diabetes mellitus for less than 5 years. In terms of age, the average age of respondents was 52.9 years with a standard deviation of 5.35, the youngest being 32 years old and the oldest 59 years old.

Table 2. Frequency Distribution of Quality of Life and self management among Type 2 Diabetes Mellitus Respondents of Productive Age (n=63)		
Variabel	<i>f</i>	%
Quality of life		
Low	23	36,5
High	40	63,5
Self Management		
Poor	30	47,6
Good	33	52,4

Table 2 shows that more than half (63.5%) of respondents had a high quality of life, while less than half (36.5%) of respondents had a low quality of life. More than half (52.4%) of respondents had good self-management, while less than half (47.6%) of respondents had poor self-management.

Table 3. The Relationship between Self-Management and Quality of Life among Productive-Age Respondents with Type 2 Diabetes Mellitus (n=63)							
Self management	Quality of life						P Value
	Low		High		Total		
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	
Poor	16	69,9	14	35,0	30	47,6	0,017
Good	7	30,4	26	65,0	33	52,4	
Total	23	100	40	100	63	100	

Table 3 shows that more than half of the respondents with poor self-management, namely 16 respondents (69.9%), had a low quality of life, and more than half of the respondents with good self-management, namely 26 respondents (65.0%), had a high quality of life. The results above indicate that DM patients with good self-management tend to have a high quality of life. Statistical test results who square, p-value obtained value= 0.017 ($p < 0.05$), it can be concluded that there is a significant relationship between self-management and quality of life in productive-age type 2 diabetes mellitus patients.

DISCUSSION

The results of this study indicate a relationship between self-management and quality of life in productive-age patients with type 2 diabetes mellitus. This is in line with research conducted by Gamal et al., which showed a p-value of 0.001, indicating a significant relationship between self-management and quality of life in patients with diabetes mellitus (Gamal et al., 2024). Another study also showed a relationship between self-management and quality of life in patients with diabetes mellitus (Nooseisai et al., 2021).

Diabetes mellitus in productive age presents a significant challenge because it requires long-term management involving diet, physical activity, medication, and blood sugar monitoring (Magliano et al., 2018). Type 2 diabetes, which often occurs in productive age, can be caused by an unhealthy lifestyle, such as a diet high in sugar and fat, lack of physical activity, and stress related to work or social life (Sattar et al., 2019). Patients of productive age with poor self-management of diabetes often experience unstable blood glucose levels. Uncontrolled dietary patterns, lack of physical activity, and non-adherence to medication or regular blood glucose monitoring can lead to recurrent hyperglycemia or hypoglycemia. These conditions not only accelerate organ damage but also cause symptoms such as fatigue, excessive thirst, and decreased concentration, which interfere with daily activities. (Magliano et al., 2018).



In addition, inadequate self-management may trigger acute and chronic complications. Acute complications, such as diabetic ketoacidosis, can be life-threatening if not treated promptly (Qin et al., 2020). Meanwhile, chronic complications, including retinopathy, nephropathy, neuropathy, and cardiovascular disease, develop gradually but significantly impair bodily functions. These complications increase morbidity rates and limit patients' independence in performing activities, thus negatively affecting long-term quality of life (Zhang et al., 2024).

Furthermore, the limitations caused by poor diabetes control impact social, emotional, and work productivity aspects. Patients may face difficulties in maintaining their role in the workplace due to frequent illness or fatigue (Kim et al., 2015). (Suwannaphant et al., 2017). Emotionally, anxiety, stress, or even depression may arise as the burden of illness becomes heavier. Ultimately, these conditions reduce overall quality of life, both in terms of physical health and psychosocial well-being (Kim et al., 2015).

The results of this study demonstrate a significant relationship between self-management and the quality of life of productive-age DM patients. Self-management is a crucial component in the management of type 2 diabetes mellitus, which includes diet management, physical activity, blood glucose monitoring, medication use, and stress management (Mikhael et al., 2020). Various studies have shown that good self-management directly contributes to improving patients' quality of life. Individuals who actively manage their diabetes tend to have better glycemic control, fewer complications, and fewer symptoms that interfere with daily activities (Cengiz et al., 2024). Thus, self-management impacts not only the physical but also the psychological and social aspects of patients.

Research supports a positive relationship between self-management and quality of life in people with diabetes. Studies show that self-management education programs are effective in improving healthy behaviors and psychological well-being in patients, which in turn improves overall quality of life (Davidson et al., 2022). Good self-management also improves communication skills with healthcare professionals and encourages patient adherence to treatment (Jafar et al., 2023). This reinforces the understanding that active patient involvement in disease management is a strong predictor of improved quality of life.

This study found that productive-age diabetes patients with good self-management had a low quality of life, even though they should theoretically have a high quality of life. Based on the questionnaire analysis, the main issue for respondents with good self-management and a low quality of life was the impact domain, specifically the emotional burden they felt. This means that explaining their disease to others becomes a burden for productive-age patients. This question highlights the emotional and social burden experienced by productive-age patients, who feel burdened by having to constantly explain their illness to coworkers, friends, or their social circle. This can lead to stress, discomfort, and even stigma, contributing to a reduced quality of life even when their medical condition is well-controlled.

Furthermore, among respondents with a high quality of life but poor self-management, the most significant issue was the question about foot care. This suggests that while respondents are able to maintain their quality of life in social, emotional, and other physical areas, they are still neglecting preventive measures such as foot care, which is crucial for people with diabetes (Gamal et al., 2024). Lack of attention to foot care can have serious long-term consequences, such as an increased risk of infection, diabetic ulcers, and even amputation, which will drastically reduce quality of life in the future (Nooseisai et al., 2021).

This phenomenon demonstrates that the quality of life of people with diabetes is not only determined by their physical condition and medical management, but is also greatly influenced by psychological and social factors. During their productive years, the pressure to appear healthy, active, and physically unaffected can leave individuals feeling isolated when explaining their chronic illness (Kalra et al., 2018). These feelings can be a significant mental burden, especially if patients lack adequate emotional support from their immediate environment. Therefore, interventions in diabetes management need to address psychosocial aspects, including coping strategies, social education, and counseling to reduce the patient's emotional burden.

Furthermore, the relationship between self-management and quality of life is also influenced by other factors such as education level, family support, perception of the disease, and physical limitations. Recent studies have found that despite relatively good glucose management, many patients still lack optimal physical activity, which



contributes to a reduced quality of life. Therefore, interventions to improve self-management need to consider the patient's social and psychological context. Continuous health education and a holistic approach are essential for consistent self-management and a positive impact on the quality of life of people with type 2 diabetes mellitus.

CONCLUSION

It can be concluded that there is a significant relationship between self-management and quality of life in productive-age type 2 diabetes mellitus patients at the Belimbing Community Health Center in Padang City in 2025 with a p-value of 0.017. Healthcare workers are expected to further improve patient education and support through more structured self-management programs. Furthermore, interventions in diabetes management are expected to consider psychosocial aspects, including coping strategies, social education, and counseling to reduce the patient's emotional burden.

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ETHICAL APPROVAL

This study has obtained ethical approval from the Health Research Ethics Committee of (Dinas Penanaman Modal dan Pelayanan Terpadu Satu Pintu) with approval number 070.14120/DPMPTSP-PP/II/2025.

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