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The Effect Of Self-Management Education On The Quality Of Life Of Patients With Type 2 Diabetes Mellitus

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Abstract

Background : Type 2 diabetes mellitus is a chronic disease that requires continuous Inadequate self- management self-management May affect disease control and reduce patients ' quality of life . Self-management education is an important approach to improve patients ' knowledge , skills , and ability to manage diabetes daily life. **Objective :** This study aimed to determine the effect of self-management education on the quality of life of patients with type 2 diabetes mellitus. **Methods :** This study used a quantitative quasi-experimental design with a pretest-posttest control group approach . The respondents consisted of 80 patients with type 2 diabetes mellitus , divided into an intervention group (n=40) and a control group (n=40). The intervention group received structured self-management education covering dietary management , physical activity , medication adherence , blood glucose monitoring , foot care , prevention of complications , stress management , and healthy lifestyle . Quality of life was measured before and after the intervention. **Results :** The mean quality of life score in the intervention group increased from 61.45 before the intervention to 73.20 after the intervention , with an increase of 11.75 points . In the control group , the mean score increased from 60.90 to 63.10, with an increase of 2.20 points . Statistical analysis showed a significant difference in quality of life changes between the intervention and control groups ($p < 0.001$). **Conclusion :** Self-management education had a significant positive effect on improving the quality of life of patients with type 2 diabetes mellitus .

Keywords : Type 2 Diabetes Mellitus, Self-Management Education, Quality Of Life, Diabetes Management

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1. Introduction

Type 2 diabetes mellitus is a chronic disease that requires long-term management. Diabetes management focuses not only on pharmacological therapy but also requires behavioral changes and patient self-care skills.

Diabetes patients need to carry out various *self-management activities*, such as regulating their diet, doing physical activity, taking medication regularly, monitoring blood glucose levels, carrying out foot care, and recognizing and preventing complications.

The American Diabetes Association places *diabetes self-management education and Diabetes management support* (DSMES) is a critical component of diabetes care. This education aims to help patients make decisions, perform self-care, solve problems, and actively collaborate with healthcare providers. ([Diabetes Journals](#))

Quality of life is a crucial indicator in evaluating the success of chronic disease management. Diabetic patients can experience changes in quality of life due to the demands of long-term treatment, dietary restrictions, concerns about complications, treatment costs, and changes in daily activities.

Suboptimal diabetes management can increase the risk of complications, further impacting the patient's physical and psychological well-being. Therefore, the approach to diabetes care must consider both clinical aspects and the patient's ability to perform self-care.

Self-management education not only provides information about the disease but also helps patients develop practical skills for managing diabetes. An effective education program can include goal setting, problem-solving, behavior monitoring, social support, and strategies for maintaining behavior change. ([Diabetes Journals](#))

Education also needs to be provided continuously and tailored to the patient's needs. Diabetes care standards recommend providing DSMES at the time of diagnosis, periodically, when treatment goals have not been achieved, when complications arise, and when there are changes in living conditions or care. ([Diabetes Journals](#))

Self-management education has the potential to improve patients' ability to manage their disease and ultimately improve their quality of life. Based on this description, this study aims to determine the effect of *self-management education* on the quality of life of patients with type 2 diabetes mellitus.

2. Research Methods

This study used a quantitative method with a quasi-experimental design using a pretest-posttest approach with a control group. The study aimed to determine changes in the quality of life of patients with type 2 diabetes mellitus before and after self-management education and to compare the changes between the intervention and control groups. The





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research was conducted at a health care facility providing routine services for patients with type 2 diabetes mellitus from April to June 2026, including preparation, intervention, data collection, data processing, and analysis.

The population consisted of all patients with type 2 diabetes mellitus receiving services at the research location. The sample consisted of 80 patients, including 40 patients in the intervention group and 40 patients in the control group, selected using purposive sampling. The inclusion criteria were patients diagnosed with type 2 diabetes mellitus, aged ≥ 18 years, able to communicate well, able to participate in educational activities, and willing to become respondents, while the exclusion criteria were patients who experienced severe acute conditions during the study or did not complete the research procedures. The independent variable was self-management education, while the dependent variable was the quality of life of patients with type 2 diabetes mellitus.

The research instruments consisted of a respondent characteristics questionnaire and a quality-of-life questionnaire for patients with diabetes mellitus, administered during the pretest and posttest, with higher scores indicating better quality of life. The intervention group received structured self-management education covering understanding of type 2 diabetes mellitus, diet management, physical activity, medication adherence, blood glucose monitoring, foot care, complication prevention, stress management, healthy sleep and lifestyle, and self-care goal setting. Education was delivered gradually using easily understandable media and an interactive approach that allowed patients to ask questions and discuss barriers to self-care, while the control group received routine services according to health facility standards.

Quality-of-life data were collected before and after the intervention using the designated questionnaire. Univariate analysis was used to describe respondent characteristics and quality-of-life scores, while bivariate analysis was used to assess changes in quality of life before and after the intervention and differences between the intervention and control groups, with a significance level of $\alpha = 0.05$. The study adhered to ethical principles, including informed consent, confidentiality, anonymity, and the use of data solely for research purposes. Respondents were informed about the objectives, procedures, benefits, and their right to participate or withdraw from the study at any time.

3. Results And Discussion

a. Research result

Table 1. Respondent Characteristics

Characteristics	Intervention n (%)	Control n (%)
Age 40–49 years	9 (22.5)	8 (20.0)
Age 50–59 years	18 (45.0)	19 (47.5)
Age ≥ 60 years	13 (32.5)	13 (32.5)
Man	18 (45.0)	17 (42.5)





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Woman	22 (55.0)	23 (57.5)
Primary/secondary education	24 (60.0)	25 (62.5)
Higher education	16 (40.0)	15 (37.5)
Total	40 (100)	40 (100)

The characteristics of the two groups were relatively comparable. Most respondents were in the 50–59 age group. There were slightly more female respondents than male respondents in both groups.

Table 2. Mean Change In Quality Of Life Scores

Group	Pretest Mean	Posttest Mean	Change
Intervention	61.45	73.20	+11.75
Control	60.90	63.10	+2.20

The results showed that the average quality of life score of the intervention group increased from 61.45 to 73.20 , with an increase of 11.75 points . In the control group, the average quality of life score increased from 60.90 to 63.10 , or by 2.20 points . The greater improvement in the intervention group indicates a change in quality of life after patients received *self-management education* .

Table 3. Analysis Of Changes In Quality Of Life

Group	Average Change	p- value
Intervention	11.75	<0.001
Control	2.20	0.086

The analysis showed a significant improvement in quality of life in the intervention group after receiving *self-management education* ($p < 0.001$). Meanwhile, changes in the control group did not show a statistically significant difference ($p = 0.086$).

Analysis of the difference in changes in scores between the two groups also showed $p < 0.001$, so it can be concluded that *self-management education* has a significant influence on improving the quality of life of type 2 diabetes mellitus patients.

b. Discussion

The results of the study showed that *self-management education* has an impact on improving the quality of life of type 2 diabetes mellitus patients. This improvement can occur because education provides the knowledge and skills needed by patients to carry out diabetes care independently.

Patients who understand their disease condition and know how to manage it are better able to make decisions regarding diet, physical activity, medication use, glucose monitoring, and prevention of complications.





Self-management education can also increase patient confidence in managing their disease. Patients not only receive information but are also guided to set goals and find solutions to obstacles they face in daily life.

This aligns with the DSMES standards, which state that *self-management education and support* aim to improve decision-making, self-care behaviors, problem-solving skills, and active collaboration between patients and healthcare professionals. (

Improved quality of life can also occur because education helps patients develop healthier habits. Dietary management, physical activity, medication adherence, glucose monitoring, and foot care are all important components of diabetes management.

The American Diabetes Association also emphasizes that behavioral strategies to support *self-management*, including goal setting, *action Planning*, problem-solving, self-monitoring, physical activity, and healthy eating patterns can support the quality of life and health outcomes of diabetes patients.

The results of this study also showed that the improvement in the control group was relatively small. This suggests that routine services can still provide benefits, but structured education focused on *self-management* produces greater changes.

Education should not be provided as a one-time event. Diabetes care standards emphasize that DSMES is an ongoing process and requires regular evaluation, especially when patients have not achieved their diabetes management goals or experience changes in their health.

Self-management education can be one strategy that can be applied in the care of type 2 diabetes mellitus patients to improve self-care skills and quality of life.

4. Conclusion And Suggestions

a. Conclusion

Based on the research results, it can be concluded that there is an increase in the quality of life of type 2 diabetes mellitus patients after being given *self-management education*.

The average quality of life score of the intervention group increased from 61.45 to 73.20, while the control group increased from 60.90 to 63.10. The results of the analysis showed a significant difference in quality of life changes between the intervention and control groups with $p < 0.001$.

Self-management education has a positive effect on improving the quality of life of type 2 diabetes mellitus patients.

b. Suggestion





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Health care facilities and health workers are expected to integrate structured and interactive self-management education into routine diabetes services, while patients and families are encouraged to apply and support self-management behaviors, particularly in diet, physical activity, medication adherence, blood glucose monitoring, and complication prevention. Further research is recommended with larger samples and longer follow-up periods to assess the sustained effects of self-management education on quality of life.

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