Nursing Journal
Volume 11, Issue 1, Page 310 – 315
e-ISSN: 2354-6050

https://ejurnal.poltekkesjakarta3.ac.id/index.php/JKep
DOI: https://doi.org/10.32668/jkep.v11i1.2396

THE RELATIONSHIP BETWEEN SELF-EFFICACY AND DIET ADHERENCE IN PATIENTS WITH DIABETES MELLITUS AT THE HEALTH CENTER OF CIRACAS DISTRICT, EAST JAKARTA

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Keywords:
Diabetes Mellitus
Dietary Adherence
Self Efficacy

Abstract

Diabetes mellitus is a chronic metabolic disorder caused by impaired insulin secretion or ineffective insulin function, resulting in persistent hyperglycemia and an increased risk of long-term complications. Dietary management is an important component of diabetes treatment because proper eating habits help maintain blood glucose levels and prevent complications. However, many patients still experience difficulties in following dietary recommendations, which can negatively affect glycemic control. Recent developments in diabetes management emphasize the role of behavioral and psychological factors in improving self-care, particularly self-efficacy. Self-efficacy refers to an individual's confidence in performing behaviors necessary to achieve desired health outcomes. Although previous studies have mainly focused on pharmacological therapy and metabolic outcomes, limited evidence has examined the relationship between self-efficacy and dietary adherence in primary healthcare settings in Indonesia. Therefore, understanding this relationship is important for developing effective nursing and behavioral interventions. This study aimed to determine the relationship between self-efficacy and dietary adherence among patients with diabetes mellitus at the Ciracas District Health Center, East Jakarta. A quantitative study with a cross-sectional design was conducted in May 2025 involving 66 respondents selected through purposive sampling. Self-efficacy was measured using the Diabetes Management Self-Efficacy Scale (DMSES), while dietary adherence was assessed using the Perceived Dietary Adherence Questionnaire (PDAQ). Data were analyzed using univariate analysis and the Chi-Square test. The results showed a significant relationship between self-efficacy and dietary adherence (p = 0.001). Patients with higher self-efficacy demonstrated better compliance with dietary recommendations, indicating that greater confidence supports effective diabetes self-management behaviors in daily life.

Received: March 2026
Accepted: April 2026
Published: May 2026

INTRODUCTION

Diabetes mellitus is a chronic metabolic disorder characterized by impaired insulin secretion or ineffective insulin action, resulting in hyperglycemia [7,17]. Insulin, a hormone produced by the β-cells of the pancreas, plays an essential role in regulating glucose metabolism, including glucose utilization and storage. Impaired insulin production or sensitivity causes glucose to accumulate in the bloodstream because glucose cannot effectively enter body cells. Over time, uncontrolled diabetes mellitus may lead to complications affecting tissues, organs, kidneys, blood vessels, eyes, and the nervous system [7,17].

The World Health Organization (WHO) reported that approximately 422 million people worldwide are living with

diabetes mellitus, representing 8.5% of the adult population, with an estimated 2.2 million deaths associated with the disease. Many individuals develop diabetes mellitus before the age of 70 years, particularly in low- and middle-income countries. According to the International Diabetes Federation (IDF), the number of people with diabetes mellitus in Indonesia is projected to increase to 28.57 million by 2045, representing a 47% increase from 19.47 million in 2021. More than 90% of patients suffer from type 2 diabetes mellitus. The IDF also reported that approximately 336 million people worldwide were living with type 2 diabetes mellitus, contributing to 4.6 million deaths annually [7]. Basic Health Research (Riskesdas) data showed that the prevalence of diabetes mellitus in Indonesia was 8.4 million cases in 2000 and is expected to increase to 21.3 million by 2030. Between 2013 and 2018, the prevalence of diabetes mellitus increased by approximately 2–3.4% across provinces in Indonesia [3].

The Special Capital Region (DKI) Jakarta has the highest prevalence of diabetes mellitus in Indonesia. Riskesdas data demonstrated that the prevalence increased from 2.5% in 2013 to 3.4% in 2018, affecting approximately 250 thousand residents or 10.5 million people in DKI Jakarta. East Jakarta ranks second in the prevalence of diabetes mellitus within the province. Data from the Non-Communicable Disease Program of the East Jakarta Health Office in 2021 reported 57,190 visits related to diabetes mellitus, making it the second most common non-communicable disease in the region [18].

Dietary therapy or dietary regulation is an important strategy for preventing complications among patients with diabetes mellitus [16]. The Indonesian Endocrinology Association (PERKENI) stated that dietary adherence plays a critical role in successful diabetes management because meal planning is one of the foundations of glycemic control [14]. Dietary adherence is based on the "3J" principles, namely schedule, type, and amount of food consumed. Patients who adhere to dietary recommendations generally achieve better glycemic control, thereby reducing the risk of acute and long-term complications. Internal factors such as beliefs, attitudes, and personality also influence adherence to dietary therapy [2].

Self-efficacy refers to an individual's belief in their ability to organize and perform actions necessary to achieve specific outcomes [1]. Individuals with high self-efficacy are more likely to demonstrate effective self-care behaviors and maintain treatment adherence. Self-efficacy also contributes to self-control in maintaining behaviors that support diabetes management [4]. Increased self-confidence and motivation have been associated with improved self-care management among patients with diabetes mellitus [8].

Several studies have demonstrated a relationship between self-efficacy and dietary adherence among patients with diabetes mellitus. Masruroh and Farida reported that self-efficacy was significantly associated with dietary adherence among patients with diabetes mellitus [13]. Similarly, Djaelan et al. found that self-efficacy was associated with medication adherence and dietary patterns among patients with type 2 diabetes mellitus [5]. Tajaruddin et al. also demonstrated a significant relationship between self-efficacy and dietary adherence among patients with type 2 diabetes mellitus [15].

Anggraeni et al. stated that the increasing prevalence of diabetes mellitus and its complications highlights the importance of dietary adherence as part of diabetes management [2]. Adherence to dietary recommendations requires strong self-efficacy and intention to maintain healthy eating behaviors. Individuals with high self-efficacy tend to establish clear health goals and remain committed to achieving them.

Based on these findings, the researchers were interested in examining the relationship between self-efficacy and dietary adherence among patients with diabetes mellitus at the Ciracas District Health Center, East Jakarta.

METHODS

This study employed a quantitative correlational design with a cross-sectional approach. The population consisted of adult patients diagnosed with diabetes mellitus and registered at the Ciracas District Health Center, East Jakarta. A total of 66 respondents were recruited using a non-probability sampling technique with a purposive sampling approach based on predetermined inclusion criteria.

The study was conducted from April to May 2025 at the Ciracas District Health Center. The independent variable in this study

was self-efficacy, whereas the dependent variable was dietary adherence. Data were collected using respondent characteristic questionnaires, the Diabetes Management Self-Efficacy Scale (DMSES), and the Perceived Dietary Adherence Questionnaire (PDAQ) [1,13]. Both instruments had previously been tested for validity and reliability.

Before data collection, respondents who met the inclusion criteria were identified and provided with explanations regarding the study objectives, benefits, and research procedures. Respondents who agreed to participate signed an informed consent form. Ethical principles applied in this study included respect for persons, beneficence, non-maleficence, justice, and confidentiality.

Data analysis included univariate analysis to describe respondent characteristics and bivariate analysis using the chi-square test to examine the relationship between self-efficacy and dietary adherence.

This study received ethical approval from the Health Research Ethics Commission of Poltekkes Kemenkes Jakarta III with approval number DP.04.03/F.XIX.13/3507/2025 dated April 22, 2025.

RESULTS AND DISCUSSION

Table 1. Distribution of Respondents Based on Age, Gender, and Education Level at the Ciracas District Health Center, East Jakarta (n=66)

No	Variabel	N	%
	Respondent Characteristics		
1	**Age**		
	Early Adults (18-40)	13	19,7%
	Late Adulthood (41-59)	53	80,3%
2	**Gender**		
	Man	14	21,2%
	Woman	52	78,8%
3	**Education**		
	Primary Education (Elementary-Junior High)	23	34,8%
	Higher Education (High School-College)	43	65,2%

Based on Table 1, the respondents in this study were mostly women (52, 78.8%) and of late adulthood (53, 80.3%), with the majority highly educated (43, 65.2%).

Table 2. Distribution of Respondents Based on *Self-efficacy* and Dietary Adherence in Patients with Diabetes Mellitus at the Ciracas District Health Center, East Jakarta (n=66)

No	Variabel	N	%
1	***Self efficacy***		
	Low	28	42,4%
	Tall	38	57,6%
2	**Diet Adherence**		
	Non-compliant	31	47,0%
	Obedient	35	53,0%

Table 2 shows that most of the respondents have high *self-efficacy,* as many as 38 people (57.6%), while respondents with low *self-efficacy* are 28 people (42.4%). In addition, the majority of respondents showed diet adherence to 35 people (53%), and respondents did not adhere to the diet amounted to 31 people (47%).

Table 3. Relationship Between Self-Efficacy and Dietary Adherence (n=66)

Variable	Diet Adherence				Total		P value	OR (95% CI)
	Non-compliant		Obedient					
	N	%	N	%	N	%		
Self-efficacy (Low)	22	33.3	6	9.09	28	42.39	0.001	11.815
Self-efficacy (High)	9	13.6	29	43.9	38	57.5		

Based on Table 3, most respondents (43.9%) had high self-efficacy accompanied by high dietary adherence. Statistical analysis demonstrated a significant relationship between self-efficacy and dietary adherence among patients with diabetes mellitus, with a p-value of 0.001 ($\alpha < 0.05$). The Odds Ratio value of 11.815 indicated that respondents with low self-efficacy were 11.8 times more likely to be non-adherent to dietary recommendations compared with respondents who had high self-efficacy.

Self-efficacy refers to an individual's belief in their ability to perform tasks and achieve desired outcomes. Individuals with high self-efficacy are more confident in carrying out behaviors necessary to achieve health-related goals [11]. Self-efficacy is associated with confidence in one's ability to perform desired actions and maintain positive behavioral changes [1].

Previous studies have demonstrated a significant relationship between self-efficacy and dietary adherence among patients with diabetes mellitus. A study conducted among patients with diabetes mellitus at the Waikoa Health Center in Ambon reported a significant relationship between self-efficacy and

dietary adherence, with a p-value of 0.04 [12]. Self-efficacy or self-confidence plays an important role in implementing dietary management among patients with diabetes mellitus. Patients with strong confidence in their ability to follow dietary recommendations are more likely to maintain blood glucose levels within normal limits. Dietary management for patients with diabetes mellitus includes regulation of meal timing, portion size, and food type according to healthcare recommendations [12].

Another study involving patients with type 2 diabetes mellitus at Makassar City Hospital also reported a significant relationship between self-efficacy and dietary adherence, with a p-value of 0.000 [10]. Respondents with high levels of self-efficacy tended to demonstrate better adherence to dietary recommendations, whereas those with low self-efficacy were more likely to be non-adherent.

Similarly, another study reported a significant relationship between self-efficacy and dietary adherence, with a p-value of 0.000 [13]. The study showed that most respondents with high self-efficacy adhered to dietary recommendations for diabetes mellitus management. Self-efficacy plays an important role in shaping individual behavior, including adherence to dietary regulation. Dietary adherence requires confidence in one's ability to maintain treatment recommendations and achieve positive health outcomes. Individuals with strong self-confidence are more likely to maintain healthy behaviors and remain motivated to improve their health condition [13].

Another study explained that patients with diabetes mellitus who had high self-efficacy were more likely to comply with dietary recommendations provided by healthcare professionals [9]. Patients with high self-efficacy believe that dietary therapy can prevent complications, control blood glucose levels, and reduce the risk of diabetes-related health problems through adherence to prescribed treatment programs.

Self-efficacy is essential for maintaining behaviors and actions directed toward achieving desired outcomes. Adherence behavior may be influenced by internal motivation in the form of strong self-efficacy. Individuals with higher levels of self-confidence are more likely to achieve positive health outcomes. The findings of this study indicate that higher self-efficacy is associated with greater dietary adherence among patients with diabetes mellitus.

CONCLUSION

This study confirmed that self-efficacy was significantly associated with dietary adherence among patients with diabetes mellitus at the Ciracas District Health Center, East Jakarta. Patients with higher self-efficacy demonstrated better dietary adherence, whereas individuals with low self-efficacy were more likely to exhibit non-adherent dietary behavior ($p = 0.001$; OR = 11.815). These findings indicate that self-efficacy is an important determinant of effective diabetes self-management [1,4,13].

Clinically, assessment of self-efficacy should be integrated into routine diabetes care in primary healthcare settings to identify patients at risk of poor dietary adherence. Nursing interventions, including structured diabetes education, motivational interviewing, behavioral counseling, and continuous self-management support, are recommended to strengthen patient self-efficacy and improve adherence outcomes [4,13]. The implementation of self-efficacy–based interventions in diabetes management programs may contribute to improved glycemic control and prevention of long-term complications [14,16]. Future studies are recommended to develop and evaluate intervention models focused on improving self-efficacy as part of comprehensive diabetes care.

ACKNOWLEDGMENT

The authors would like to express sincere gratitude to the Director of Poltekkes Kemenkes Jakarta III, the Head of the Nursing Department, the East Jakarta City Health Office, and the Head of the Ciracas District Health Center for granting permission and supporting the implementation of this study. Appreciation is also extended to all respondents who willingly participated in this research. The findings of this study are expected to contribute as evidence-based support for the development of nursing programs, particularly in strengthening self-efficacy–based diabetes education and self-management interventions within primary healthcare services to improve dietary adherence among patients with diabetes mellitus.

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