

## The Relationship Between Health Literacy and Self-Care Among Patients with Type 2 Diabetes Mellitus

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### ABSTRACT

Type 2 Diabetes Mellitus (T2DM) is a chronic disease requiring consistent self-care management to prevent complications and improve quality of life. However, adherence to self-care practices among patients remains suboptimal. Health literacy is considered a key factor influencing patients' ability to understand health information and apply it effectively in daily diabetes management. This study aimed to analyze the relationship between health literacy and self-care among patients with T2DM. A quantitative analytic study with a cross-sectional design was conducted involving 112 patients in primary healthcare settings. Health literacy was measured using the eHealth Literacy Scale (eHEALS), while self-care behaviors were assessed using the Summary of Diabetes Self-Care Activities (SDSCA). Data were analyzed using Spearman's correlation test. The results showed that the majority of respondents had low health literacy (59.8%) and inadequate self-care practices (79.5%). A strong and significant positive correlation was found between health literacy and self-care ( $\rho = 0.755$ ;  $p < 0.001$ ). These findings indicate that higher health literacy is associated with better self-care behaviors among patients with T2DM. Strengthening health literacy may serve as an important strategy to enhance diabetes self-management and prevent complications in primary healthcare settings.

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### INTRODUCTION

Type 2 Diabetes Mellitus (T2DM) is a chronic non-communicable disease that continues to increase globally and poses a significant public health burden. According to the International Diabetes Federation (2021, 2025), Indonesia ranks among the countries with the highest number of diabetes cases, with prevalence steadily rising over recent years. Without

effective management, T2DM can lead to severe complications such as cardiovascular disease, kidney failure, blindness, and diabetic foot ulcers (Farmaki et al., 2020; Prabowo & Risdianto, 2023). Effective diabetes management requires consistent self-care practices, including blood glucose monitoring, dietary regulation, physical activity, medication adherence, and foot care. However, many patients still demonstrate

inadequate self-care behaviors, increasing the risk of complications and reduced quality of life (Toar et al., 2024).

Health literacy has been identified as a critical determinant of successful chronic disease management. Health literacy refers to an individual's ability to access, understand, evaluate, and apply health information to make appropriate health decisions. Patients with higher health literacy are more likely to engage in effective self-management behaviors and maintain better glycemic control (Nugent et al., 2023). Previous studies in Indonesia have also shown a significant relationship between health literacy and self-care among patients with T2DM (Riska et al., 2021; Subiyanto et al., 2022). Limited health literacy may hinder patients' ability to translate medical information into daily self-care practices, particularly in primary healthcare settings where educational time is often limited.

Although previous research has highlighted the importance of health literacy in diabetes management, evidence examining its relationship with self-care behaviors in local primary care contexts remains limited. Understanding this relationship is essential to inform targeted educational strategies aimed at improving patient outcomes. Therefore, this study aimed to analyze the relationship between health literacy and self-care among patients with Type 2 Diabetes Mellitus in primary healthcare settings.

## METHODS

This study employed a quantitative analytic design with a cross-sectional approach to examine the relationship between health literacy and self-care among patients with Type 2 Diabetes Mellitus (T2DM). The study was conducted in primary healthcare settings. A total of 112 patients diagnosed with T2DM were recruited using a consecutive sampling technique based on inclusion criteria, including confirmed diagnosis of T2DM, age  $\geq 18$  years, ability to communicate effectively, and willingness to participate.

## RESULT AND DISCUSSION

### Result

Table 1. Distribution of Health Literacy and Self-Care Levels (n = 112)

Variable	Category	Frequency (n)	Percentage (%)
Health Literacy	Low	67	59.8
	Adequate	45	40.2
Self-Care	Inadequate	89	79.5
	Adequate	23	20.5

Based on the analysis, there was a strong and statistically significant positive relationship between patients' health literacy and self-care among individuals with Type 2 Diabetes Mellitus. Among the 112 respondents, all patients with low health literacy (67 individuals) demonstrated inadequate self-care, whereas the majority of patients with adequate health literacy (31 out of 45) were able to perform self-care effectively. Spearman's rank correlation test yielded a rho value of 0.755 with a significance level of  $p < 0.001$ , indicating a very strong and statistically significant association. These findings confirm that better health literacy is directly associated with patients' ability to perform self-care activities, highlighting the importance of improving health literacy as a key strategy to support effective diabetes management. Previous studies also support these findings. Research conducted at RS PKU Muhammadiyah reported a significant relationship between health literacy and self-care management among patients with Type 2 Diabetes Mellitus (Dewi & Rekawati, 2025). Furthermore, other studies have shown that health literacy is positively associated with diabetes self-management and glycemic control (Nugent et al., 2023). These findings emphasize the importance of enhancing health literacy to improve self-care behaviors and prevent further complications among patients with Diabetes Mellitus.

## Discussion

This study identified a strong and statistically significant positive relationship between health literacy and self-care among patients with Type 2 Diabetes Mellitus. The findings indicate that patients with higher levels of health literacy are more capable of performing appropriate self-care behaviors, including diet management, physical activity, medication adherence, blood glucose monitoring, and foot care. The strength of the correlation ( $\rho = 0.755$ ;  $p < 0.001$ ) suggests that health literacy is a substantial factor influencing patients' ability to translate health information into daily self-care practices.

The results are consistent with previous studies demonstrating that health literacy plays a crucial role in diabetes self-management. Dewi and Rekawati (2025) reported a significant association between health literacy and self-care management among patients with Type 2 Diabetes Mellitus. Similarly, Nugent et al. (2023) found that higher health literacy was positively associated with improved diabetes self-management and better glycemic control. These findings support the notion that health literacy extends beyond basic knowledge acquisition; it involves the capacity to interpret medical information, evaluate its relevance, and apply it effectively in real-life situations.

Inadequate health literacy may hinder patients from understanding treatment instructions, recognizing early signs of complications, and adhering consistently to recommended self-care behaviors. This condition is particularly relevant in primary healthcare settings, where consultation time is often limited and patients are expected to manage their condition independently. Without sufficient health literacy, even patients with adequate disease knowledge may struggle to implement consistent self-care behaviors, thereby increasing their risk of complications.

Therefore, strengthening health literacy should be considered a strategic priority in diabetes management

programs. Educational interventions tailored to patients' comprehension levels, simplified communication strategies, and structured self-management support may enhance patients' ability to perform effective self-care. Improving health literacy not only empowers patients but also contributes to better long-term outcomes and complication prevention among individuals with Type 2 Diabetes Mellitus.

## CONCLUSION

This study demonstrates a strong and statistically significant relationship between health literacy and self-care among patients with Type 2 Diabetes Mellitus in primary healthcare settings. Patients with higher levels of health literacy were more likely to perform effective self-care behaviors, whereas those with limited health literacy consistently demonstrated inadequate self-care practices. These findings highlight that health literacy is a critical determinant of successful diabetes self-management and cannot be overlooked in chronic disease care.

Strengthening health literacy through targeted education, simplified health communication, and structured self-management support may serve as a strategic approach to improve patient engagement and reduce the risk of complications. Integrating health literacy enhancement into primary healthcare services is essential to promote sustainable self-care behaviors and improve long-term outcomes among individuals with Type 2 Diabetes Mellitus.

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