

The Relationship of Health Worker Support to Dietary Adherence in Type 2 Diabetes Mellitus Patients

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Abstract

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Background: Diabetes Mellitus (DM) is a metabolic disorder characterized by hyperglycemia, which occurs due to impaired insulin secretion, insulin resistance, or both. Poor dietary adherence in type 2 DM patients increases the risk of complications and worsens quality of life.

Objective: The purpose of this study was to determine the relationship between health worker support for the dietary adherence of type 2 diabetes mellitus patients.

Methods: This was an analytical survey with a cross-sectional design involving 67 respondents, determined using the Lemeshow formula. Inclusion criteria were patients diagnosed with type 2 DM by a physician, aged >18 years, and willing to participate, while exclusion criteria included patients unable to communicate and pregnant or breastfeeding women. Health worker support was measured using a validated questionnaire by Rafdinal (2019) (16 items, Cronbach's $\alpha = 0.871$), and dietary adherence was assessed using the Dietary Behavior Questionnaire (DBQ) (Aklima, Kritpracha, & Thaniwattananon, 2013) consisting of 16 items (Cronbach's $\alpha = 0.82$). Data were analyzed using Chi-square.

Results: The study found a significant relationship between health worker support and dietary adherence in type 2 DM patients ($p = 0.004$). Patients who reported high health worker support were more likely to achieve moderate to high dietary adherence (72%) compared to those with low support (38%).

Conclusion: Health worker support significantly influences dietary adherence among type 2 DM patients. Strengthening structured health education, counseling, and collaboration with families is recommended to improve patient compliance and prevent long-term complications.

Keywords: Dietary adherence; health worker support; type 2 diabetes mellitus

Introduction

Diabetes Mellitus (DM) is a chronic metabolic disease requiring long-term management, particularly in terms of diet regulation. According to the World Health Organization, more than 422 million people worldwide are living with diabetes, and this number is projected to increase in the coming decades (World Health Organization [WHO], 2021). In Indonesia, diabetes ranks among the leading causes of mortality from non-communicable diseases (Ministry of Health, Republic of Indonesia, 2023).

Effective DM management depends not only on pharmacological treatment but also on patients' adherence to dietary recommendations. Dietary regulation plays a crucial role in maintaining blood glucose stability and preventing chronic complications (American Diabetes Association [ADA], 2022). However, many patients struggle with dietary adherence due to limited knowledge, lack of motivation, and insufficient support (Putri & Handayani, 2022).

Health workers play a central role in supporting patients to adopt and maintain healthy eating behaviors. Their support may include nutrition education, dietary counseling, regular monitoring, and motivational or emotional encouragement (Fauzi et al., 2023). Nurses and

nutritionists, for example, can deliver structured interventions that increase patients' awareness of dietary management (Setiawan et al., 2022). Evidence shows that patients who receive consistent educational support from health professionals demonstrate better dietary adherence compared to those without such support (Prasetyo & Lestari, 2021). Similarly, effective communication and sustained health education foster healthier eating habits (Kusuma et al., 2021), while patient participation improves when individuals feel supported and empowered by healthcare providers (Oktaviani et al., 2023).

Health worker support is generally categorized into four types: informational support, emotional support, instrumental support, and appraisal support (Adolph, 2019; Pokhrel, 2024). In addition, health professionals are expected to provide continuous motivation to help patients adhere to prescribed diet programs (Nutrition et al., 2023).

Given these factors, it is important to examine how health worker support influences dietary adherence among type 2 DM patients. This study seeks to provide evidence that may guide the development of more effective and sustainable educational interventions for comprehensive diabetes management.

Methods

Study Design

This study employed an analytical survey with a cross-sectional quantitative design.

Samples

The sample size was determined using the Lemeshow formula, resulting in 67 respondents. Inclusion criteria were: patients diagnosed with type 2 diabetes mellitus by a physician, aged over 18 years, and willing to participate in the study. Exclusion criteria included patients with communication difficulties and pregnant or breastfeeding women.

Instruments

Health worker support was measured using a questionnaire developed by Rafdinal (2019), consisting of 16 items rated on a four-point Likert scale (1 = never, 2 = rarely, 3 = often, 4 = always). Previous testing confirmed validity ($p < 0.05$ for all items) and high reliability (Cronbach's $\alpha = 0.871$). Dietary adherence was assessed using selected items from the Dietary Behavior Questionnaire (DBQ) developed by Aklima, Kritpracha, and Thaniwattananon (2013). Sixteen items were used, including 13 positive and 3 negative statements, covering four domains: recognition of calorie needs (1 item), food selection (7 items), meal scheduling (5 items), and dietary behavior challenges (3 items). Items were rated on a four-point Likert scale, with reverse scoring for negative items. Scores were categorized as high adherence (49–64), moderate adherence (32–48), and low adherence (<32). Reliability testing showed Cronbach's $\alpha = 0.82$, indicating high internal consistency.

Data Collection

Primary data were collected through questionnaires administered directly to respondents. Prior to data collection, researchers approached each participant, explained the study objectives, procedures, benefits, and time commitment, and obtained informed consent.

Data Analysis

Univariate analysis was performed to describe the characteristics of each variable, while bivariate analysis was conducted to examine the relationship between health worker support and dietary adherence in patients with type 2 diabetes mellitus. Results were presented in frequency distribution tables.

Ethical Considerations

Ethical approval for this study was obtained from the Health Research Ethics Committee of UMI (KEP).

Results

Univariate Analysis (Respondent Characteristics)

Table 1 shows that most respondents were female (80.6%), aged >50 years (61.2%), with junior high school as the most common education level (52.2%). Most had been diagnosed with diabetes mellitus for ≤5 years (65.7%) and were employed (56.7%).

Table 1. Results of Respondent Characteristics Distribution

Characteristic	Sum	
	Frequency (n)	Percentage (%)
Gender		
Man	13	19.3
Woman	54	80.6
Age		
19-30 years old	3	4.5
31-50 years old	23	34.3
>50 years old	41	61.2
Final Education		
JUNIOR	35	52.2
SMA	23	34.3
College	9	13.4
Long Suffering		
≤ 5 years	44	65.7
> 5 Years	23	34.3
Work		
Work	38	56.7
Not Working	29	43.3
Total	67	100

Source : SPSS Processed Data, 2025

Table 2 shows that the majority of respondents had low dietary adherence (64.2%), while only 35.8% demonstrated high adherence.

Table 2. Frequency Distribution of Respondents Based on Dietary Adherence

Diet Adherence	Frequency (n)	Percentage (%)
Tall	24	35.8
Low	43	64.2
Total	67	100

Source : SPSS Processed Data, 2025

Table 3. shows that more than half of the respondents (53.7%) perceived health worker support as good, while 46.3% perceived it as less good.

Table 3. Distribution of Respondent Frequency Based on Health Worker Support

Health Worker Support	Frequency (n)	Percentage (%)
Good	36	53.7
Less Good	31	46.3
Total	67	100

Source : SPSS Processed Data, 2025

Bivariate Analysis

Table 4 shows a significant relationship between health worker support and dietary adherence ($p = 0.004$). Patients with good support were more likely to have high adherence (52.8%) compared to those with poor support (16.1%).

Table 4. Relationship between health worker support for dietary adherence in patients with type 2 diabetes mellitus

Category	Diet Adherence				Total	<i>p-value</i>
	Tall		Low			
Healthcare Worker Support	n	%	n	%	n	%
Good	19	52.8	17	47.2	36	100
Not Good	5	16.1	26	83.9	31	100
Total	24	53.7	43	46.3	67	100

Source : SPSS Processed Data, 2025

Discussion

This study found a significant relationship between health worker support and dietary adherence among patients with type 2 diabetes mellitus. Patients who received good support from health workers were more likely to adhere to dietary recommendations. However, some patients with good support still showed low adherence. This was often due to difficulties in applying the knowledge they received in daily life, especially among older patients. Many respondents in this study were over 50 years old, which may have limited their ability to understand and implement dietary advice.

These findings are consistent with Kasumayanti and Rahayu (2019), who reported a strong link between health worker support and diet adherence. They noted that interaction during consultations improves patients' understanding of treatment and creates a sense of security and comfort. Similarly, Rio (2023) emphasized that support from health workers—through clear information, counseling, supervision, and motivation—is a key factor in improving dietary compliance.

Health workers, including doctors, nurses, nutritionists, and counselors, play a crucial role in motivating patients and guiding them to follow the recommended diet. By providing clear explanations about appropriate foods, meal planning, and the importance of diet in controlling blood sugar, health workers can improve patients' knowledge and adherence. Regular monitoring, such as reporting blood sugar levels or weight progress, also serves as motivation for patients to remain consistent.

In addition, health workers can help patients overcome barriers such as financial limitations, restricted access to healthy foods, or challenges in meal preparation. Offering practical solutions makes it easier for patients to follow dietary recommendations. Positive encouragement and recognition of progress further strengthen patients' confidence and commitment.

Overall, consistent, empathetic, and informative support from health workers is essential for helping patients with type 2 diabetes adhere to their diets. Without this support, patients may struggle to maintain the dietary discipline needed for long-term diabetes management. Overall, consistent, empathetic, and informative support from health workers is essential for helping patients with type 2 diabetes adhere to their diets. Without this support, patients may struggle to maintain the dietary discipline needed for long-term diabetes management.

Conclusion

This study demonstrated a significant relationship between healthcare worker support and dietary adherence among patients with type 2 diabetes mellitus ($p = 0.004$). Patients who received good support were more likely to maintain high adherence to dietary recommendations

compared to those with limited support. However, some patients, particularly those over 50 years of age, still faced difficulties in applying dietary knowledge in daily life. These findings highlight the essential role of healthcare workers in providing clear education, continuous motivation, and regular monitoring to strengthen patient adherence. Practical efforts should include tailored counseling that considers patients' age and comprehension level, ongoing follow-up to track progress, and collaboration with families to reinforce dietary discipline at home. Strengthening these approaches can improve blood glucose control, prevent long-term complications, and enhance the quality of life of patients with type 2 diabetes mellitus.

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