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ORIGINAL RESEARCH

THE EFFECT OF DASH DIET EDUCATION USING THE PEER GROUP METHOD ON THE EATING PATTERNS OF DIABETES MELLITUS PATIENTS IN KALIBUNTU VILLAGE

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ABSTRACT

The management of diabetes mellitus (DM) includes diet management as an important component in maintaining blood sugar stability. The DASH diet helps maintain electrolyte balance and cardiovascular health through calcium, potassium, and magnesium intake. Dietary education using the peer group method is useful for sharing experiences, exchanging information, and providing and receiving emotional support.. This study aimed to determine the effect of DASH diet education using the peer group method on the eating patterns of Diabetes Mellitus (DM) patients. The research design was pre-experimental with a one-group pretest-posttest approach. The study population consisted of 40 respondents, with a total sampling technique, and the data were analyzed using the Wilcoxon Sign Rank Test. After receiving DASH diet education, most patients had good eating patterns. The study results showed that DASH diet education using the peer group method had an effect on the eating patterns of Diabetes Mellitus patients. Based on the study findings, it was expected that community nurses could use DASH diet education interventions to improve blood sugar levels, lipid profiles, and blood pressure in diabetes mellitus patients.

Keywords

Diabetes Mellitus, Eating Patterns, Education, DASH Diet

INTRODUCTION

Diabetes mellitus (DM) remains one of the main focuses of national research in the category of degenerative diseases, following cardiovascular, cerebrovascular, and geriatric diseases. The WHO estimates that by 2030, the number of DM patients will reach 300 million worldwide. This disease is chronic and characterized by an increase in blood sugar levels. The management of DM can be carried out through four main pillars: health education, dietary regulation,

physical activity, and the use of antidiabetic medications. Regular health monitoring, especially blood sugar level checks, plays a crucial role in the successful implementation of these four pillars (Anugerah, 2020; Oktaviana et al., 2024).

In the management of diabetes mellitus (DM), one of the essential components in maintaining blood sugar stability is diet management. The DASH diet was initially designed to lower blood pressure but has also been effective in controlling diabetes mellitus (DM) and other chronic diseases (Dwika & Kusuma, 2022). This dietary pattern emphasizes the consumption of fruits, vegetables, low-fat dairy products, whole grains, and lean proteins while limiting salt, added sugars, and saturated fats. This diet helps maintain electrolyte balance and cardiovascular health through the intake of calcium, potassium, and magnesium (Dwika & Kusuma, 2022; Rajpal & Ismail-Beigi, 2020).

The prevalence of Diabetes Mellitus patients in Kalibuntu Village has been increasing year by year. According to data from the local community health center, more than 10% of the adult population in the village has been diagnosed with diabetes. This fact is a major concern, considering the complications that DM can cause, such as cardiovascular disease, kidney failure, neuropathy, and even blindness (Mediarti et al., 2020; Praythiesh Bruce & Vasantha Mallika, 2019).

Health education is one of the ways to prevent complications by increasing patients' understanding of Diabetes Mellitus (DM) management. This includes adherence to dietary patterns and encourages patients' independence in managing their health and performing self-care (Oktaviana et al., 2024).

Several factors influence patients' eating patterns as part of Diabetes Mellitus management, including knowledge and understanding of dietary guidelines, interaction with healthcare professionals in diet planning, self-confidence, personality, attitude, and support from family and peers with similar conditions (Khasanah et al., 2021; Kshanti et al., 2019; Simbolon et al., 2019). Providing information through education delivered by peers in a group setting fosters a sense of togetherness, which correlates with the patient's psychological well-being (Guntur Alfianto et al., 2022; Roberts et al., 2017).

The peer group is a community for Diabetes Mellitus (DM) patients to share experiences, exchange information, and provide and receive emotional support (Fatmawati & Wahyudi, 2021; Rahmadina et al., 2022). Through this forum, they can openly discuss their challenges and experiences. Education from peers helps improve patients' understanding of DM management instructions and provides additional motivation through the support given. This study presents a novelty in the application of the peer group method in DASH diet education for patients with diabetes mellitus in rural areas, particularly in Kalibuntu Village, which has rarely been studied. It is expected to provide a more contextual, participatory, and effective educational approach to improving dietary patterns. This study aims to determine the effect of DASH diet education using the peer group method on the eating patterns of Diabetes Mellitus (DM) patients.

METHOD

This study used a pre-experimental design with a one-group pretest-posttest approach. The independent variable in this study was DASH diet education using the peer group method, while the dependent variable was the eating patterns of Diabetes Mellitus patients. The study population consisted of 40 respondents, with a total

sampling technique, and the data were analyzed using the Wilcoxon Sign Rank Test. The authors have obtained ethical approval with number 678/KEPK-UNHASA/VIII/2025, and the results will be presented based on the research conducted on patients with Diabetes Mellitus.

RESULTS

Table 1. Respondents' Characteristics Based on Age, Gender, Education, Occupation, and Duration of Diabetes Mellitus (n = 40)

Variable	Frequency	Precentage (%)
Age		
40-45 years	7	17,5
46-50 years	20	50
>51 years	13	32,5
Gender		
Male	25	62,5
Female	15	37,5
Education		
Low education	5	12,5
Middle education	30	75
Higher education	5	12,5
Occupation		
Unemployed	6	15
Civil servant (ASN)	4	10
Entrepreneur	20	50
Retired	10	25
Duration of having DM		
>1 years	30	75
>2 years	10	25

Based on Table 1 above, the results showed that most respondents were aged between 46-50 years (50%), male (62.5%), had a middle education level (junior/senior high school) (75%), worked as entrepreneurs (50%), and had been suffering from diabetes mellitus for more than one year.

Table 2. Analysis of Diabetes Mellitus Patients' Eating Patterns Before and After DASH Diet Education

Pola Makan	f	%	Mean	SD	P value
Before Intervention					
Good	8	20	1,35	0,25	0,001
Poor	32	80			
After Intervention					
Good	34	85	2,25	0,45	
Poor	6	15			

Based on Table 2 above, the results showed that most patients had poor eating patterns (80%) before receiving DASH diet education. However, after receiving DASH diet education, the majority of patients had good eating patterns (85%). The Wilcoxon Sign Rank Test results showed a p-value of 0.001 < 0.005, indicating that DASH diet education using the peer group method had an effect on the eating patterns of Diabetes Mellitus patients.

DISCUSSION

Before receiving the DASH diet education intervention using the peer group method, most respondents had poor eating patterns. According to behavioral change theory, an action such as eating patterns will be established when individuals understand and comprehend the behavior. This indicates that knowledge has a strong correlation with the success of behavioral change. In relation to the general data in this study, the majority of respondents (75%) had a middle education level. This condition influenced their critical thinking skills, understanding of received information, and access to information through mass media and social media related to eating patterns in Diabetes Mellitus patients (Ardiani et al., 2021; Yudhistina et al., 2021). Therefore, before the intervention was given, respondents' eating patterns were categorized as poor (Mediarti et al., 2020; Sahwa & Supriyanti, 2023).

The lack of information received by Diabetes Mellitus (DM) patients regarding the DASH diet remains one of the challenges in following the diet correctly and consistently. This is in line with the study by Arini et al. (2020), which stated that there is a significant correlation between respondents' level of knowledge and their eating patterns in adhering to the established DM diet program (Raden Vina Iskandya Putri1, 2023). Non-compliance with dietary patterns among DM patients is also related to a lack of support, both in terms of information and social support from peers who can listen to their concerns and help overcome challenges in following the diet (Ma et al., 2022; Mediarti et al., 2020; Qodir, 2022). Research conducted by Sugiharto (2020) also revealed that informational support from healthcare professionals and social support from friends or family are crucial strategies in improving dietary adherence as a treatment approach. Therefore, DASH diet education involving fellow diabetes patients (peer group method) is needed to support the success of the diet and treatment (Hendra et al., 2022).

After receiving the DASH diet education intervention using the peer group method, the eating patterns of the majority of respondents improved. Most respondents who received peer group education, previously trained by the researcher, were able to manage their eating patterns with the DASH diet more effectively. They adhered better to the types and amounts of food consumed, ensuring a high intake of fruits, vegetables, low-fat dairy products, whole grains, and lean proteins while reducing salt, added sugars, and saturated fats as recommended. The results of this study showed an improvement in eating patterns after the intervention. Statistically, DASH diet education using the peer group method was proven to have an impact on the eating patterns of Diabetes Mellitus (DM) patients (Ardiani et al., 2021; Qodir, 2022). These findings align with the study by Ilkafah (2011), which demonstrated that the DASH diet education intervention using the peer group method could improve the eating patterns of DM patients. This indicates that individuals who receive education from their peer group tend to have higher self-confidence in managing DM through independent dietary regulation (Oktaviana et al., 2024).

A person's behavior is influenced by intention and motivation, which are obtained through support from peers (peer groups), including informational and social support (Sahwa & Supriyanti, 2023). Changes in respondents' behavior regarding their eating patterns resulted from the education provided about the DASH diet, which is recommended for Diabetes Mellitus (DM) patients, as well as the exchange of experiences among respondents regarding challenges and strategies for maintaining

diet discipline. Additionally, the peer group education method allows individuals to provide mutual support and reinforcement, further increasing their motivation to adhere to the diet. This study applied the Health Promotion Model with the peer group method to strengthen the motivation of patients with diabetes mellitus in adopting the DASH diet. Most previous studies were conducted in urban areas using conventional education, so the effectiveness of peer groups in rural settings had been rarely explored. The findings of this study showed that peer group–based DASH diet education was effective in changing the dietary patterns of patients in Kalibuntu Village in a participatory and sustainable manner. As a result, they can better control blood sugar levels and reduce the risk of more severe DM complications (Ojo et al., 2022).

CONCLUSIONS

DASH diet education using the peer group method has an impact on the eating patterns of Diabetes Mellitus patients. This method can be used as a patient care approach for Diabetes Mellitus both in clinical and community settings. Community nurses are expected to implement DASH diet education interventions to help improve blood sugar levels, lipid profiles, and blood pressure in Diabetes Mellitus patients.

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