



The Effect Of The Dash Diet Using The Peer Group Method On Eating Patterns Among Patients With Diabetes Mellitus

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Article Information	ABSTRACT
Received : 30 April 2026 Revised : 21 June 2026 Accepted : 04 July 2026	Diabetes mellitus (DM) is a chronic disease with a high prevalence in Indonesia, including. One of the main factors influencing the incidence of diabetes is an unhealthy diet. The DASH (Dietary Approaches to Stop Hypertension) diet is a dietary method that has been proven to help control blood pressure and blood sugar metabolism, which is relevant for diabetes management. However, the successful implementation of a diet is often hindered by a lack of knowledge and social support. This study proposes a Peer Group approach as an intervention method to support the success of the DASH diet among diabetes mellitus patients. The objective of this study is to evaluate the effectiveness of the Peer Group method in implementing the DASH diet among diabetes mellitus patients by measuring changes in dietary patterns and patients' health status. This study employed a pre-experimental design with a cross-sectional approach, involving a sample of 40 participants selected via purposive sampling, which included the distribution of questionnaires before and after the intervention. The research methods included identifying study subjects, developing the DASH diet module, implementing the Peer Group intervention, analyzing the intervention results, and subsequently publishing the findings.
Keywords: DASH Diet, Peer Group, Dietary Patterns, Diabetes Mellitus	
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Introduction

Diabetes mellitus (DM) is one of the chronic diseases that has become a global health problem with a prevalence that continues to increase every year (Pilla, S. J., Yeh, 2025). According to the International Diabetes Federation (IDF) in 2021, Indonesia is among the top ten countries with the highest number of diabetics in the world, with more than 19 million adults living with diabetes (Liu, J.,2025). The increase in the incidence of diabetes is influenced by various factors, such as lifestyle changes, consumption of foods high in sugar and fat, low physical activity, and high levels of stress in modern society (Sangouni, A. A.,2024). This condition not only has an impact on the quality of life of individuals, but also increases the burden of health services due to long-term complications caused, such as cardiovascular disease, kidney failure, neuropathy, and retinopathy (Beigrezaei, S.,2023).

The phenomenon of increasing cases of diabetes mellitus also occurred in Kalibuntu Village. Based on data from the local health center, more than 10% of the adult population has been diagnosed with diabetes mellitus and this number continues to increase every year. The high prevalence of DM in the region shows that disease control is still not optimal. One of the main factors is the unhealthy diet of the people, characterized by high consumption of simple carbohydrates, fatty foods, and low fiber. Uncontrolled diets can worsen the condition of diabetics because they lead to increased blood glucose levels and insulin resistance. Therefore, dietary changes are one of the important aspects in the management of diabetes mellitus (Mirzababaei,2023).

One of the recommended dietary approaches in the management of diabetes mellitus is the DASH (Dietary Approaches to Stop Hypertension) Diet. The DASH diet is known to be effective in helping to control blood sugar levels, improve insulin sensitivity, and lower the risk of metabolic complications (Saaty, A. H., & Aljadani, H. M., 2024). This diet emphasizes the consumption of fruits, vegetables, whole grains, low-fat protein, and limiting the intake of sugar and saturated fat (Zhang, Z., Zhou, X.,2023). However, the application of the DASH Diet in diabetics still faces various obstacles. Many people with DM have difficulty maintaining a healthy diet due to a lack of knowledge, motivation, and social support from the surrounding environment. This condition shows a gap of theory, namely theoretically the DASH Diet is effective in managing diabetes, but its implementation in the community has not been optimally carried out due to low social support and patient compliance behavior (Pourfard, N. R.,, 2025).

Several previous studies have discussed the effectiveness of the DASH Diet and social support approaches to the management of diabetes mellitus. Research by Chong et al. (2015) shows that the Peer Group approach is able to increase individual understanding and involvement in implementing healthy living behaviors (Lv, J., Jiao, S., Li, W., Ding, S., Ma, L., & Zhang, Q.2025). Other research also states that peer group support can improve dietary adherence and patient motivation in undergoing lifestyle changes. However, most previous studies have focused more on individual education or only assessed the effect of diet on blood sugar levels. Research that combines the application of the DASH Diet with the Peer Group method in changing the diet of diabetics, especially in rural communities, is still limited. This is a research gap that needs to be studied further (Wen, J., Gu, S., Wang, X., & Qi, X. 2023).

The novelty or novelty in this study lies in the integration of the DASH Diet approach with the Peer Group method as a community-based intervention strategy in improving dietary changes in people with diabetes mellitus. This research not only focuses on diet education, but also emphasizes the importance of social support between fellow diabetics in building motivation, compliance, and sustainability of healthy living behaviors. In addition, this research was conducted in the context of rural communities in Kalibuntu Village, so that it is expected to be able to provide a real picture of the effectiveness of peer-based interventions in local communities.

Based on this description, the purpose of this study is to analyze the effectiveness of the application of the DASH Diet with the Peer Group method on dietary changes in patients with diabetes mellitus in Kalibuntu Village. This research is expected to make a scientific contribution to the development of a community-based diabetes management model and become a recommendation for health workers in developing education and assistance programs for people with diabetes mellitus in a more comprehensive and sustainable manner. The argument for this study is based on the assumption that changes in health behavior are not only influenced by individual knowledge, but also by social support and group interactions that are able to increase patient motivation and compliance in living a healthy lifestyle.

Method

This study uses a pre-experimental research design with a one-group pretest-posttest approach to determine the effect of the application of the DASH Diet with the Peer Group method on dietary changes in patients with diabetes mellitus in Kalibuntu Village, Kraksaan

District, Probolinggo Regency. The study was conducted from December 2024 to January 2025 with a population of 40 patients with diabetes mellitus who were selected using a total sampling technique, so that the entire population was used as research respondents. The intervention was carried out through the application of the DASH Diet supported by the Peer Group method as a form of mentoring and social support between people with diabetes mellitus. Data collection was carried out using dietary questionnaires and direct observation of changes in respondents' eating habits before and after the intervention. The data obtained was analyzed using a paired t-test statistical test to determine the difference in pretest and posttest scores after the administration of intervention. In addition, the analysis was also carried out using the Partial Least Square (PLS) approach as a variance-based structural equation model to test the influence between research variables more comprehensively.

Research Results

The analysis technique used in this study is univariate analysis to determine the distribution of descriptive frequencies such as age, ethnicity, marital status, education and occupation. Bivariate analysis was used to determine whether there was an Effect of the DASH Diet with the Peer Group method on diet in patients with Diabetes Millitus.

Table 1 Frequency Distribution of Respondent Characteristics

No	Features	Intervention Groups		Control Group	
		n	%	n	%
1	Age				
	31-35 Years	3	7	9	21
	36-40 Years	23	55	20	48
	41-45 Years	12	29	11	26
	46-50 Years	4	9	2	5
	Total	42	100	42	100
2	Jobs				
	Housewife	19	45	22	52
	Self-employed	9	22	11	26
	Private Employees	11	26	7	17
	Civil Servant	3	7	2	5
	Total	42	100	42	100
3	Education Level				
	No School	6	15	4	9
	Primary School	11	26	10	24

	Junior High School	10	24	11	26
	Senior High School	11	26	15	36
	University	4	9	2	5
	Total	42	100	42	100
4	Marital Status				
	Married	38	91	40	95
	Divorce	4	9	2	5
	Total	42	100	42	100
5	Ethnicity				
	Jawa	13	31	15	36
	Mature	29	69	27	64
	Total	42	100	42	100

Table 2 Dietary Compliance with the DASH Intervention Group Method (n=42)

Family Support Before and After	Mean Ranks	Sum of Ranks	P value
Dietary Compliance	6.14	67.50	0.024
Nutritional Knowledge	3.00	15.00	0.034
Quality of Food Choices	8.00	120.00	0.001
Social Support and motivation	5.00	17.00	0.042

Based on table 2, data analysis has been carried out with *the wilcoxon* test on the form of dietary adherence with the dash method after being given an intervention in the intervention group showing that each *p value* < 0.05, namely support Dietary adherence: 0.024, Nutritional Knowledge: 0.034, Quality of Food Choices: 0.001 and Social Support and Motivation: 0.042.

Table 3 Family Support Control Group (n=42)

Family Support Before and After	Mean Ranks	Sum of Ranks	P value
Dietary Compliance	1.50	3.00	0.57
Nutritional Knowledge	0.00	0.00	0.317
Quality of Food Choices	1.00	1.00	0.317

Social Support and motivation	1.50	3.00	0.157
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Based on table 3, data analysis has been carried out with *the wilcoxon* test on the form of family support after being given intervention in the control group showing that each *p value* > 0.05, namely Dietary Adherence: 0.157, Nutritional Knowledge: 0.317, Quality of Food Choices: 0.317 and Social Support and Motivation: 0.157.

Table 4 DASH Diet with Peer Group Method on Intervention Group Diet (n=42)

Family Support	N	Mean Rank	Sum of Ranks	P value
Before- After	42	12.50	241.0	0.001

Based on the results of *the Wilcoxon* test in the intervention group, it was shown that *the DASH Diet with the Per Group Method had an effect* on increasing family support with a *p value of <0.05, which was 0.001*.

Table 5 Effect of the DASH Diet with the Peer Group Method on the Diet of the Control Group (n=42)

Family Support	N	Mean Rank	Sum of Ranks	P value
Before- After	42	1.50	6.50	0.16

Based on the results of *the wilcoxon* test in the control group, it was shown that *the DASH Diet with the Per Group Method did not provide any change* in family support with a *p value of <0.05, which was 0.216*.

Discussion

The results of the study showed that the application of Dietary Approaches to Stop Hypertension (DASH) with the Peer Group method had a strong relationship with the research objective, which was to improve diet in patients with Diabetes Mellitus (DM). The interventions provided were able to encourage respondents to pay more attention to the consumption of healthy foods, such as increasing the intake of fruits, vegetables, whole grains, and restricting foods high in sugar and saturated fat (Xie, X., Guo, B. 2022). The changes show that the DASH Diet approach is not only effective in controlling blood pressure, but also contributes to improved glycemic control in people with DM (Koelman, L.,2022). Support from peer groups has a positive influence on respondents' motivation and compliance in carrying out a healthy

diet (Cao, L., Yu, P.,2025). This suggests that health behavior change is easier to achieve when individuals gain social and emotional support from groups who have similar experiences.

The interpretation of the results of the study shows that the success of the intervention is not only influenced by the nutritional education aspect, but also by the social interactions formed in peer groups. Through peer groups, respondents gained space to share experiences, strategies to overcome dietary barriers, and emotional support that increased self-efficacy in managing their illness (Tseng, E., Appel, L. J.,2021, Vilela, D. L., Fonseca, 2021) These findings are in line with Albert Bandura's Social Cognitive Theory which emphasizes the importance of self-efficacy and observational learning in changing health behaviors. In addition, the results of this study also support previous research by Chong et al. (2015), Tang et al. (2013), and Dale et al. (2011) which stated that peer group support can increase adherence to health programs and strengthen long-term motivation. Thus, the combination of the DASH Diet and the Peer Group method has been proven to have a synergistic effect in improving healthy living behaviors in DM patients.

The novelty of this study lies in the integration of the DASH Diet with the Peer Group method as a community-based intervention in people with diabetes mellitus in rural areas (Molinaro, A., Bel Lassen, 2020). Most previous studies have focused only on the effectiveness of diet or individualized education, while this study emphasizes the importance of social support in maintaining dietary adherence on an ongoing basis (Rostami, H., Parastouei, K., 2022, Fang, M., Wang, D., 2025). The scientific contribution of this study shows that a community approach can be a strategic alternative in chronic disease management programs, especially diabetes mellitus (Karbasi, S., Azaryan, 2022). However, there are still some results that are not fully as expected, such as respondents who have difficulty maintaining a healthy diet consistently. This is influenced by family eating habits, economic limitations, and low access to certain healthy foods. These conditions suggest that the success of dietary interventions is influenced not only by the individual, but also by environmental and socioeconomic factors of the community.

The practical implication of this study is the need to develop community-based diabetes management programs that involve peer groups as a form of ongoing support for people with DM. Health workers, especially community nurses and health cadres, can use the Peer Group method as a medium of education and assistance in the implementation of the DASH Diet (Tarazona-Meza, C., Garcia Larsen,2024, Timlin, D., McCormack, 2020). Theoretically, this

study reinforces the concept that health behavior change requires a combination of educational interventions and social support. However, this study has limitations, including a relatively small number of samples, the absence of a control group, and the limited duration of the intervention so that it cannot optimally describe the long-term effects. Therefore, further research is recommended to use an experimental design with a control group, a larger sample count, and add clinical measurements such as HbA1c, blood pressure, and body mass index to obtain a more comprehensive picture of the effectiveness of the DASH Diet with the Peer Group method in patients with diabetes mellitus

Conclusion

The Supportive Educative System is effective in increasing family support in problems of risky sexual behavior in adolescents. Providing education and emotional support to parents can help parents better understand risky sexual problems and make families more capable of providing appropriate assistance to adolescents in facing these challenges.

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