



THE EFFECTIVENESS OF FAMILY-BASED HEALTH EDUCATION ON THE DASH DIET (DIETARY APPROACHES TO STOP HYPERTENSION) IN REDUCING BLOOD PRESSURE AMONG PATIENTS WITH HYPERTENSION: A LITERATURE REVIEW

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ABSTRACT

The global rise in hypertension cases has made it one of the leading causes of morbidity and mortality from cardiovascular diseases. Nonpharmacological approaches using the DASH diet have been shown to be effective in controlling blood pressure; however, their implementation requires family involvement supported by systematic health education. This study aims to analyze the effectiveness of health education on the DASH diet for families in reducing blood pressure in patients with hypertension based on a literature review. This study employed a literature review method, searching for articles on PubMed, ScienceDirect, and ResearchGate published between 2020 and 2025. A total of 339 articles were identified, and following the PRISMA screening process, 8 articles were selected for analysis. Selection was conducted according to the PRISMA flowchart, resulting in eight articles meeting the criteria for descriptive analysis. The study findings indicate that providing DASH diet education involving family participation can help improve dietary patterns in hypertensive patients and contribute to controlling and lowering blood pressure. DASH diet education involving the family has been shown to contribute to changes in eating behavior and blood pressure control in individuals with hypertension.

Keywords: DASH Diet; family; health education; hypertension

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INTRODUCTION

Hypertension is a public health issue whose prevalence is increasing every year. This condition is characterized by persistently high blood pressure and is a major risk factor for heart disease, stroke, and kidney damage (Lichtenstein et al., 2021). Hypertension remains a global health challenge, with its prevalence continuing to rise in Indonesia, reaching 34% by 2023 (World Health Organization, 2023). Non-pharmacological interventions such as the DASH diet have been shown to reduce systolic blood pressure by up to 11 mmHg, particularly when supported by family (Dipla et al., 2023). Family-focused health education not only maximizes exposure to dietary patterns but also drives long-term changes in household habits to reduce the risk of cardiovascular disease. Recent studies demonstrate that a DASH-based digital approach effectively lowers blood pressure in approximately 7,000 participants across various countries (Dodge et al., 2025)

(World Health Organization, 2025), states that hypertension causes millions of deaths each year, making a comprehensive approach to management essential. In Indonesia, the prevalence of hypertension is also high and is found among both the working-age population and the elderly, underscoring the critical importance of prevention and health promotion.

One non-pharmacological approach that has been proven effective in controlling blood pressure is the DASH diet (Dietary Approaches to Stop Hypertension) (Sangouni et al., 2025). The DASH diet emphasizes the consumption of fruits, vegetables, low-fat dairy products, and nuts, as well as the

reduction of sodium, saturated fat, and added sugars. Various studies have shown that when followed consistently, the DASH diet can significantly lower blood pressure in people with hypertension (Filippou et al., 2020).

However, the success of this diet does not depend solely on an individual's knowledge but also on family support (Phn et al., 2024). Health education for families plays a crucial role because families help provide food, establish healthy eating habits, and encourage patients to adopt a healthy lifestyle (Siervo, 2021). As families gain a better understanding of the DASH diet, it is hoped that adherence to the diet will increase and lead to long-term behavioral changes that help lower blood pressure (Hashemi, 2022). Therefore, this study aims to analyze the effectiveness of health education regarding the DASH diet for families of individuals with hypertension, as well as its impact on blood pressure reduction, making it highly relevant. This study is expected to demonstrate the extent to which family-based interventions in diet and lifestyle management can help lower blood pressure in individuals with hypertension.

METHOD

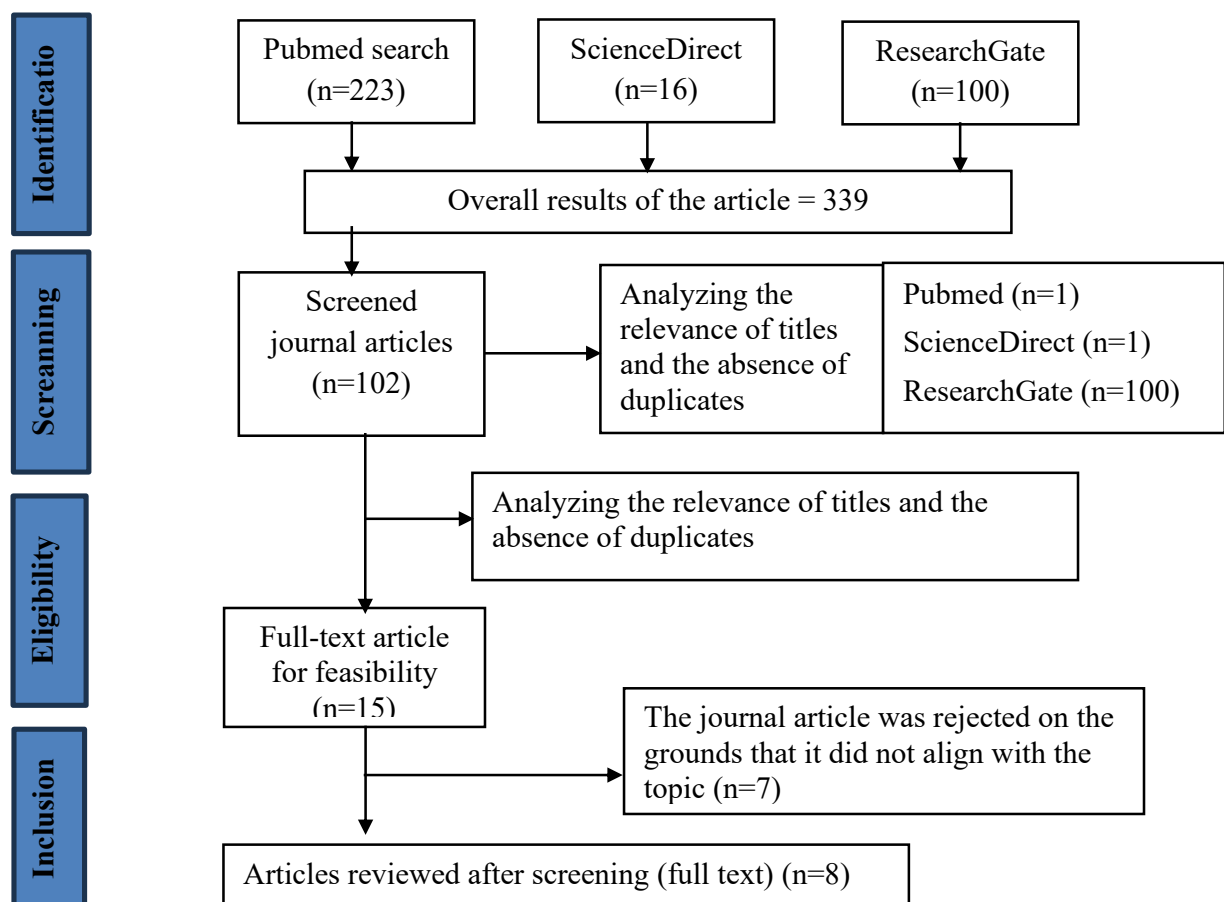


Figure 1. PRISMA Diagram

This study employs a literature review of 8 articles published between 2020 and 2025. A literature review involves critically reviewing, analyzing, and summarizing scholarly works—such as journal articles, books, theses, or research reports—on a specific topic. The purpose of a literature review is to identify research trends, knowledge gaps, and the methods employed, as well as to strengthen the theoretical foundation for new research (Kraus et al., 2022). The review process involved searching for relevant articles in various databases—including PubMed, ScienceDirect, and ResearchGate—over a five-year period from 2020 to 2025. The search was conducted using the selected keywords: (“Health Education”) AND (“DASH Diet (Dietary Approaches to Stop Hypertension)”) AND (“Hypertension”). This search yielded 339 articles, comprising 223 from PubMed, 16 from

ScienceDirect, and 100 from ResearchGate. Based on the processed results, 102 articles were selected based on their titles. These articles were then screened based on topic, abstract, methods, and research results, resulting in 15 articles. Subsequently, 8 articles were selected for review in accordance with the research objectives. The analysis was conducted using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) flowchart, from the initial search phase through to the final article. The selected articles provide an explanation of the effectiveness of health education on the DASH diet for families with hypertension in reducing blood pressure in patients with hypertension.

RESULT

Based on the analysis, 339 articles were identified, and 8 of them met the criteria; these were selected and tested for correlation with the relevant topic. The study covered various countries, including Poland, China, the United States, and Indonesia.

Table 2.
List of Selected Article Titles

No.	Judul	Tujuan	Metode	Hasil Penelitian
1.	The effectiveness of DASH diet nutrition education in improving adherence among hypertension patients through the use of leaflet media. Tasikmalaya, Indonesia (Atmadja et al., 2025)	To evaluate the effectiveness of DASH diet education delivered through lectures and leaflets in improving dietary adherence among patients with hypertension.	Quasi-Experimental	The results indicate that DASH diet education through lectures and leaflets significantly improves dietary adherence among patients with hypertension. The data show a significant positive effect ($p < 0.001$) on dietary adherence following the intervention.
2.	The effect of providing DASH (Dietary Approaches To Stop Hypertension) diet education on diet omliance in hypertension patients. Banyumas, Indonesia (Zavira et al., 2025)	To evaluate the effectiveness of DASH diet education in improving dietary adherence among patients with hypertension and in preventing or controlling blood pressure.	Quasi-Experimental	This indicates that DASH diet education can improve dietary adherence in patients with hypertension. The data show that the significance level (Sig. (2-tailed)) in this study was 0.000, which is statistically significant because it is less than 0.05.
3.	The effect of nutrition education based on DASH diet on dietary knowledge among patients with hypertension. UMS, Indonesia (Larasati & Yulian, 2024)	To determine the effectiveness of DASH-based nutrition education on knowledge levels regarding the hypertension diet among patients with hypertension.	Quasi-Experimental	The results indicate that the effectiveness of the DASH diet education program influences knowledge levels regarding the hypertension diet among patients with hypertension. The data show a significant difference between pre- and post-intervention levels, with a p-value of < 0.05 .
4.	Nutrition, Metabolism & Cardiovascular Diseases Implementing DASH-aligned Congregate Meals and Self-Measured Blood Pressure in two senior centers. Amerika Serikat (Hashemi et al., 2022)	To determine the effectiveness of DASH diet education on diet adherence and blood pressure in patients with hypertension.	Quasi-Experimental	The results indicate that DASH diet education significantly improves dietary adherence among patients with hypertension. In addition, DASH diet education has a significant effect on reducing both systolic and diastolic blood pressure. The data show that the p-value is 0.004, indicating a significant effect of DASH diet education on dietary adherence and blood pressure.
5.	The Effect of DASH Diet Education on Knowledge, Adherence, and Blood Pressure Management in	To determine the effect of DASH diet education on knowledge and adherence to blood pressure control	Quasi-Experimental	The results indicate that DASH diet education is effective in improving older adults' knowledge and adherence to blood pressure

No.	Judul	Tujuan	Metode	Hasil Penelitian
	Elderly Patients with Hypertension. Gresik, Indonesia (Imam et al., 2025)	among older adults		management and in significantly lowering blood pressure. The data show a significant p-value (0.000).
6.	"Effects of DASH diet with or without time-restricted eating in the management of stage 1 primary hypertension, in China. (Zhou et al., 2024)	Understanding the Effect of DASH Diet Education on Blood Pressure Reduction	Randomized controlled trial	This indicates that education about the DASH diet can improve knowledge among patients with hypertension and significantly lower blood pressure. The data show a p-value of <0.005.
7.	Assessment of Nutritional Knowledge, Dietary Habits and Nutritional Status of Cardiology Patients, Considering Differences Between Individuals with Hypertension and Atherosclerosis and Those Without These Conditions. Polandia (Sapała et al., 2025) (PUBMED)	Understanding the dietary knowledge, eating habits, and nutritional status of patients with hypertension.	Cross-sectional	This indicates that knowledge of nutritional diets among patients with hypertension significantly yields positive results at the p<0.05 level.
8.	The effect of online group education on promoting knowledge, Motivation, Self-Efficacy, Self-Care behaviors and preventing uncontrolled blood pressure in hypertensive patients : A Quasi-Experiment Study. Banyumas, Indonesia (Upoyo, 2024) (SCOPUS)	To examine the effects of online group education on knowledge of the DASH diet, motivation, self-efficacy, self-care behaviors, and blood pressure control in patients with hypertension.	Quasi-Experimental	The results indicate that online group education significantly improves knowledge of the DASH diet, motivation, self-efficacy, self-care behaviors, and blood pressure control in patients with hypertension. The data show a significant improvement (p < 0.001) in blood pressure control following the intervention.

DISCUSSION

The DASH (Dietary Approaches to Stop Hypertension) diet is one of the non-pharmacological interventions widely recommended for the management of hypertension. This diet emphasizes high consumption of fruits and vegetables, low-fat dairy products, whole grains, and legumes, as well as limiting intake of sodium, saturated fat, and added sugars. Based on the results of a review of eight peer-reviewed articles, it can be concluded that health education regarding the DASH diet has been proven effective in improving knowledge, dietary adherence, and lowering blood pressure in patients with hypertension.

The review findings indicate that DASH diet education can improve patients' and families' knowledge regarding the management of hypertension through a healthy diet. Studies by Larasati & Yulian (2024) and Imam et al. (2025) demonstrate a significant increase in respondents' knowledge levels following DASH diet education. This increase in knowledge serves as a crucial initial factor in promoting healthier dietary behavior, as a solid understanding influences patients' attitudes and adherence to the diet.

In addition to increasing knowledge, health education about the DASH diet also has a significant impact on dietary adherence among patients with hypertension. Studies by Atmadja et al. (2025) and Zavira et al. (2025) indicate that providing education through lectures, leaflets, or other educational approaches can significantly improve patients' adherence to the DASH diet. Dietary adherence is a key factor in managing hypertension, as following an appropriate diet directly impacts blood pressure stability

Furthermore, the results of this literature review indicate that the implementation of the DASH diet, supported by health education, has a positive effect on reducing systolic and diastolic blood pressure (Juraschek et al., 2022). Studies by Hashemi et al. (2022) and Zhou et al. (2024) show that patients who received DASH diet education experienced a significant reduction in blood pressure compared to before the intervention. This is attributed to lower sodium intake and increased consumption of potassium, magnesium, and fiber, which play a role in blood pressure regulation.

DASH diet education involving families has proven successful because it leverages key social support, as demonstrated by a 2023 study that found family-based interventions significantly lowered blood pressure in older adults ($p < 0.05$). Another study at the Penimbung Community Health Center in 2023 confirmed that DASH education via booklets successfully increased knowledge from an average score of 14 to 19.44 ($p = 0.001$), thereby promoting sustainability. A 2025 scoping review (Dodge et al., 2025), It also revealed that the DASH digital intervention improved dietary quality and reduced salt intake, while helping to lower healthcare costs (Miller et al., 2022).

The role of the family is a key factor in the successful implementation of the DASH diet. The education provided focuses not only on the patient but also involves the family as the primary support system. The family plays a role in food preparation, planning daily meals, and providing motivation to patients with hypertension. A study by Upoyo (2024) shows that group education, including online-based education, can improve motivation, self-efficacy, and self-care behaviors in patients with hypertension, thereby helping to prevent uncontrolled blood pressure. Overall, the findings of this study indicate that family-based DASH dietary education is effective in improving knowledge, dietary adherence, and lowering blood pressure in patients with hypertension. Therefore, DASH dietary education interventions should continue to be developed and implemented as part of promotive and preventive efforts in the management of hypertension, particularly through a family-centered approach.

CONCLUSION

Based on a literature review of eight articles published between 2020 and 2025, it can be concluded that family-based health education on the DASH diet is effective in improving knowledge, promoting dietary adherence, and lowering blood pressure in patients with hypertension. The success of implementing the DASH diet is influenced not only by individual understanding but also by family support, which serves as the primary support system in managing dietary habits and a healthy lifestyle. Therefore, healthcare professionals are expected to optimize the implementation of DASH diet education by involving families as part of non-pharmacological interventions for hypertension management, and healthcare institutions are advised to integrate family-based DASH diet education into their promotive and preventive programs on an ongoing basis. Additionally, families of individuals with hypertension are expected to play an active role in consistently following the DASH diet to support blood pressure control.

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