

Literature Review: Dietary Patterns and The Risk of Hypertension

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Article Info	Abstract
Article History	Hypertension is a global health problem and a leading cause of morbidity and mortality. This condition is influenced by various factors, particularly unhealthy dietary patterns such as high sodium and fat intake and low fiber consumption. Changes in lifestyle have contributed to the increasing prevalence of hypertension across different age groups, highlighting the need for special attention in prevention and control through nursing approaches. This study aims to determine the relationship between dietary patterns and the risk and prevalence of hypertension, as well as to identify influencing factors and potential interventions. This study employed a literature review method by searching articles through Google Scholar and Garuda databases within the period of 2021–2025. The selected articles were full-text studies with quantitative and interventional designs relevant to the topic. The keywords used were “Nutrient intake and Hypertension risk”. A total of 325 articles were identified during the initial search. After the removal of 45 duplicate articles, 280 articles remained for title and abstract screening. Subsequently, 230 articles were excluded due to irrelevance to the study topic, leaving 50 articles for full-text review. Following the full-text assessment, 40 articles were excluded because they did not meet the inclusion criteria. As a result, 10 articles were included in this literature review. The results showed that most studies found a significant relationship between dietary patterns and the risk and prevalence of hypertension. Unhealthy dietary patterns, particularly those high in sodium and fat, were proven to increase the risk of hypertension. In addition, other factors such as physical activity, level of knowledge, and medication adherence also play important roles in blood pressure control. Interventions such as the Dietary Approaches to Stop Hypertension (DASH) diet have been shown to be effective in reducing blood pressure. Conclusion of this study was ost studies indicate that dietary patterns are significantly associated with the risk and prevalence of hypertension. Therefore, implementing healthy dietary habits, improving nutrition education, and promoting lifestyle modifications are essential strategies for the effective prevention and management of hypertension.
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Introduction

Hypertension is one of the major global health problems and remains a leading cause of morbidity and mortality in both developed and developing countries. This condition is often referred to as a silent killer because many individuals are unaware of elevated blood pressure until serious complications such as heart disease and stroke occur. In Indonesia, the prevalence of hypertension continues to increase along with lifestyle changes, particularly the tendency to consume foods high in salt, fat, and low in fiber. In this context, the role of nurses is crucial in promotive and preventive efforts through health education, blood pressure monitoring, and the promotion of healthy lifestyles in the community (Khotimah, 2023). Furthermore, the increasing prevalence of hypertension is not only found in the elderly but also among

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individuals of productive age and even pregnant women, indicating that hypertension is a cross-age health problem requiring serious attention. Nurses, as frontline healthcare providers, have the responsibility to deliver comprehensive nursing care, including identifying risk factors such as dietary patterns and providing appropriate interventions to reduce the risk of hypertension (Sihombing et al., 2021).

As the prevalence of hypertension continues to rise, attention to modifiable risk factors becomes increasingly important, particularly dietary patterns. Unhealthy dietary habits, such as high sodium and fat intake and low fiber consumption, have been proven to be associated with increased blood pressure. Studies indicate that most individuals with hypertension have poor dietary habits, which increases the risk of further complications. This condition is commonly observed both in healthcare facilities and in community settings (Mardianto et al., 2023). Moreover, studies in elderly populations show that dietary patterns have a significant relationship with the risk of hypertension. Elderly individuals tend to consume foods high in salt and lacking balanced nutrition, which is exacerbated by the decline in physiological functions, making them more vulnerable to increased blood pressure. Therefore, special attention is needed in managing dietary patterns among the elderly (Julyana et al., 2022).

Not only in the elderly, dietary patterns also affect individuals of productive age and outpatients. Research shows that, in addition to dietary habits, low levels of physical activity further worsen hypertension conditions. The combination of unhealthy lifestyles and a lack of awareness regarding proper dietary habits becomes a major factor contributing to the increasing prevalence of hypertension in society. This indicates a gap between knowledge and health practices in daily life (Afnam et al., 2024).

Although many studies have demonstrated the relationship between dietary patterns and hypertension, there are still gaps in the implementation of effective interventions in the field. Many individuals lack adequate knowledge about healthy eating, making it difficult to change long-standing habits. In addition, studies show that low levels of knowledge contribute to unhealthy eating behaviors, thereby increasing the risk of hypertension (Rahmawati & Hudiawati, 2023).

Another gap can be seen in the lack of comprehensive approaches that integrate dietary patterns, physical activity, and medication adherence in hypertension management. Blood pressure control does not depend on a single factor but requires a multidimensional approach. Non-adherence to healthy lifestyle practices can lead to uncontrolled blood pressure, ultimately increasing the risk of complications (Sofianita et al., 2025).

Furthermore, various systematic review studies indicate that dietary patterns, particularly high sodium intake, are dominant factors influencing increased blood pressure. However, more specific research is still needed regarding the implementation of healthy dietary patterns that are appropriate to the local culture of Indonesian communities. This is important because differences in eating habits can affect the success of interventions (Relyta, 2023).

As an effort to address these gaps, one potential intervention is the implementation of healthy dietary patterns such as the Dietary Approaches to Stop Hypertension (DASH) diet, which has been proven effective in reducing blood pressure. Adapting this diet by considering local cultural wisdom is expected to improve community adherence to healthy eating patterns. Therefore, research on the relationship between dietary patterns and the risk of hypertension is important to provide a scientific basis for developing more effective and sustainable nursing interventions (Hatta, 2025).

Methods

This study used a literature review (LR) method, which is a systematic approach to collecting, identifying, and evaluating relevant research findings. The purpose of this study was to determine the relationship between dietary patterns and the incidence of hypertension. Literature searching was conducted through Google Scholar and national journal portals such as Garuda, with publication years limited to 2022–2025. The keywords used included “dietary patterns,” “hypertension,” and “diet.” The inclusion criteria were: 1) articles discussing the relationship between dietary patterns and hypertension, 2) full-text articles, 3) articles written in Indonesian or English, and 4) research articles. The exclusion criteria were: 1) unpublished theses or dissertations, and 2) articles that were not fully accessible.

Results and Discussion

A literature review was conducted on 10 articles published between 2022 and 2025. The results of the journal analysis are presented in Table 1 below:

Table 1. Article Research

No	Researchers	Research methods	Results
1.	The relationship between dietary patterns and physical activity with the incidence of hypertension in outpatients (Afnam et al., 2024)	Quantitative study with a cross-sectional approach, outpatient samples, analyzed using the chi-square test	There is a relationship between dietary patterns and physical activity with hypertension, where unhealthy diets increase the risk of hypertension
2.	Description of dietary patterns among hypertensive patients at Kebayoran Lama Health Center in 2024 (Atthalia, 2025)	Descriptive quantitative with total sampling technique using questionnaires	Most hypertensive patients have dietary patterns high in sodium and fat and low in fiber
3.	Intervention of healthy dietary patterns using locally adapted DASH diet for hypertension control (Hatta, 2025)	Interventional study with an experimental approach	The DASH diet is proven to reduce systolic and diastolic blood pressure in hypertensive patients
4.	The relationship between dietary patterns and the incidence of hypertension in the elderly (Julyana et al., 2022)	Quantitative with cross-sectional approach, chi-square analysis	There is a significant relationship between dietary patterns and hypertension in the elderly
5.	Analysis of the effect of dietary patterns and physical activity on the incidence of hypertension in adults (Khoirun Nissa et al., 2025)	Quantitative analytic with cross-sectional approach	Dietary patterns and physical activity significantly influence hypertension incidence in adults
6.	Description of hypertension incidence among the elderly in Adisara Village (Khotimah, 2023)	Descriptive quantitative study	Hypertension in the elderly is influenced by high salt intake and lack of physical activity
7	The relationship between dietary patterns and the incidence of hypertension (Mardianto et al., 2023)	Quantitative analytic with cross-sectional approach	A significant relationship was found between unhealthy dietary patterns and hypertension ($\rho = 0.000$)
8	The relationship between dietary patterns (type, amount, and frequency) and hypertension in the elderly (Nurlaela et al., 2025)	Quantitative analytic with cross-sectional approach	Improper dietary patterns (type, amount, frequency) are associated with increased hypertension risk
9	The relationship between knowledge and dietary patterns with hypertension incidence (Rahmawati & Hudiyawati, 2023)	Quantitative analytic with cross-sectional approach	There is a relationship between knowledge level and dietary patterns with hypertension
10	The relationship between dietary patterns and blood pressure in hypertensive patients of productive age (Ramadhan et al., 2025)	Quantitative analytic with cross-sectional approach	Diets high in fat and sodium increase blood pressure in the productive age group

Hypertension is a condition characterized by increased blood pressure $\geq 140/90$ mmHg, influenced by various factors, particularly dietary patterns and lifestyle. High intake of sodium and fat, along with low fiber consumption, plays a major role in increasing the risk of hypertension and serious complications such as heart disease and stroke. Based on the analysis of 10 articles, dietary patterns were found to have a significant relationship with the incidence of hypertension across various age groups. Additionally, factors such as physical activity, level of knowledge, and adherence to a healthy lifestyle also influence hypertension, indicating the need for preventive efforts through education and the implementation of healthy dietary patterns to control blood pressure.

Relationship between Dietary Patterns and the Incidence of Hypertension

Dietary patterns are one of the modifiable factors that play an important role in influencing the risk and prevalence of hypertension. In general, individuals who consume foods high in sodium, saturated fat, and low in fiber tend to have a higher risk of increased blood pressure. Unhealthy eating habits such as frequent consumption of processed foods, salty foods, and inadequate intake of fruits and vegetables contribute to vascular changes that can trigger hypertension. Evidence from several studies consistently indicates that unhealthy dietary patterns are strongly associated with higher blood pressure levels across different population groups. Therefore, the implementation of a balanced diet is essential in the prevention and control of blood pressure.

Studies included in this review consistently demonstrate that dietary patterns are significantly associated with hypertension, particularly among older adults. Diets characterized by excessive consumption of salt and fat were frequently linked to a higher prevalence of hypertension, while healthier eating patterns were associated with better blood pressure control. Age-related physiological changes may further increase susceptibility to the adverse effects of poor dietary habits, making elderly individuals a particularly vulnerable group. These findings collectively suggest that dietary behavior is an important determinant of hypertension among aging populations.

The reviewed studies also indicate that dietary factors extend beyond food type alone. The quantity and frequency of food consumption, meal regularity, and overall nutritional balance appear to contribute to blood pressure regulation. Excessive intake of sodium-rich and high-fat foods was repeatedly identified as a major contributor to hypertension risk. Furthermore, evidence suggests that these dietary-related risks are not confined to older adults but are increasingly observed among individuals of productive age, reflecting the growing burden of hypertension across different age groups.

Furthermore, the relationship between dietary patterns and hypertension is influenced by other lifestyle and behavioral factors. Several studies highlighted that low levels of physical activity, when combined with unhealthy dietary habits, further increase the likelihood of hypertension. In addition, inadequate knowledge regarding healthy nutrition may contribute to poor food choices and unhealthy eating behaviors, thereby increasing hypertension risk. These findings emphasize that dietary management should be accompanied by health education and lifestyle modification strategies to achieve optimal outcomes.

Moreover, evidence from various systematic reviews indicates that high sodium intake is a dominant factor in increasing blood pressure. Across the reviewed literature, excessive sodium consumption emerged as one of the most consistent predictors of hypertension risk and prevalence. The impact of sodium appears to be amplified when combined with other unfavorable lifestyle factors such as stress, sedentary behavior, and unhealthy dietary habits. These findings reinforce the importance of reducing sodium intake as a key component of hypertension prevention and management strategies.

However, interventions focusing on healthy dietary patterns have been proven effective in controlling hypertension. The findings reviewed suggest that dietary interventions, particularly the Dietary Approaches to Stop Hypertension (DASH) diet, can significantly improve blood pressure outcomes when implemented consistently. Adaptation of healthy dietary approaches to local cultural contexts may enhance adherence and long-term effectiveness. Nevertheless, many individuals with hypertension continue to exhibit unhealthy eating habits, highlighting the ongoing need for nutrition education, behavioral modification programs, and comprehensive lifestyle interventions that integrate healthy eating, physical activity, and treatment adherence.

Conclusion

In conclusion, the findings of this literature review demonstrate that dietary patterns are strongly associated with the risk and prevalence of hypertension across diverse population groups. Dietary habits characterized by excessive sodium and fat intake and insufficient fiber consumption were consistently identified as important contributors to elevated blood pressure and increased hypertension risk. Furthermore, physical inactivity and inadequate nutritional knowledge may further aggravate the development and persistence of hypertension. Conversely, evidence suggests that healthy dietary interventions, particularly the Dietary Approaches to Stop Hypertension (DASH) diet, can effectively support blood pressure management. Therefore, comprehensive strategies that integrate healthy dietary practices, regular physical activity, and continuous health education are essential for reducing the burden of hypertension and improving long-term cardiovascular health outcomes.

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