

Analysis of the Relationship Between Lifestyle and the Incidence of Hypertension Among Adult Patients at Puskesmas Bagu, Central Lombok Regency



Yulya Ningsih^{a,1,*}, Lestari Ismawati Putri^{a,2}

^a Fakultas Kesehatan, Universitas Hamzanwadi, Lombok Timur, Indonesia

¹ eyulyani1998@gmail.com; ² ismawatilestarip@gmail.com

* Corresponding author

ABSTRACT

Hypertension remains one of the leading non-communicable diseases contributing significantly to global morbidity and mortality, particularly in developing countries such as Indonesia. Lifestyle factors are widely recognized as major determinants influencing the occurrence of hypertension, yet evidence at the primary healthcare level is still limited in specific local contexts. This study aimed to analyze the relationship between lifestyle factors and the incidence of hypertension among adult patients at Puskesmas Bagu, Central Lombok Regency. A quantitative study with a cross-sectional design was conducted involving adult patients who visited the primary healthcare facility. Data were collected using a structured questionnaire to assess lifestyle variables, including dietary patterns, physical activity, smoking habits, and sleep patterns, while blood pressure measurements were obtained using standard clinical procedures. The sampling technique employed was purposive sampling, and data were analyzed using univariate and bivariate statistical tests to determine the association between variables. The results indicated that a significant proportion of respondents had unhealthy lifestyle behaviors, particularly in terms of high salt intake, low physical activity, and smoking habits. Statistical analysis revealed a significant relationship between lifestyle factors and the incidence of hypertension ($p < 0.05$), suggesting that individuals with unhealthy lifestyles were more likely to develop hypertension compared to those with healthier behaviors. These findings highlight the critical role of lifestyle modification in the prevention and management of hypertension at the primary healthcare level. Therefore, it is recommended that healthcare providers, especially nurses, strengthen health education and promote behavioral interventions targeting modifiable risk factors to reduce the burden of hypertension in the community.

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INTRODUCTION

Hypertension is a major global health problem and a leading cause of premature death worldwide. It is often referred to as a “silent killer” because it frequently presents without obvious symptoms while progressively damaging vital organs such as the heart, brain, and kidneys. According to the World Health Organization, the prevalence of hypertension continues to increase globally, particularly in low- and middle-income countries.

In Indonesia, hypertension remains one of the most common non-communicable diseases. Data from national health surveys indicate a significant rise in the prevalence of hypertension among adults, which is closely associated with changes in lifestyle and urbanization. Unhealthy behaviors such as high salt intake, lack of physical activity, smoking, and poor sleep patterns are recognized as key contributing factors.

Lifestyle plays a crucial role in the development and progression of hypertension. Dietary habits, especially excessive sodium consumption, can increase blood pressure levels. Similarly, physical inactivity contributes to obesity and cardiovascular risk, while smoking has

been shown to damage blood vessels and increase arterial stiffness. These modifiable risk factors highlight the importance of preventive strategies focused on behavior change.

At the primary healthcare level, such as Puskesmas, nurses have an essential role in health promotion and disease prevention. They are directly involved in educating patients, monitoring health status, and encouraging adherence to healthy lifestyles. However, limited local data on the relationship between lifestyle factors and hypertension poses a challenge in designing targeted interventions.

Puskesmas Bagu, located in Central Lombok Regency, serves a diverse population with varying health conditions, including a high number of hypertension cases. Understanding the relationship between lifestyle and hypertension in this setting is important to support evidence-based nursing interventions and public health programs.

Therefore, this study aims to analyze the relationship between lifestyle factors and the incidence of hypertension among adult patients at Puskesmas Bagu, Central Lombok Regency.

METHOD

This study applied a quantitative approach using a cross-sectional design to examine the association between lifestyle factors and hypertension among adult patients at Puskesmas Bagu, Central Lombok Regency. The study population included all adult patients who visited the primary healthcare center during the data collection period.

A total of 100 respondents were selected through purposive sampling based on inclusion criteria, including age ≥ 18 years, willingness to participate, and the ability to communicate effectively. Data on lifestyle factors were obtained using a structured and pre-tested questionnaire covering dietary habits (particularly salt consumption), physical activity, smoking behavior, and sleep patterns. Blood pressure was measured using a calibrated sphygmomanometer following standard clinical guidelines.

Data analysis was carried out in three stages: univariate analysis to describe respondent characteristics, bivariate analysis using the chi-square test to identify associations, and multivariate analysis using logistic regression to determine the most influential factors associated with hypertension. A significance level of $p < 0.05$ was applied.

Ethical approval was obtained from the relevant institutional review board, and informed consent was secured from all participants prior to data collection.

RESULTS AND DISCUSSION

Results

Table 1. Characteristics of Respondents (n = 100)

Variable	Frequency	Percentage (%)
Age ≥ 40 years	60	60%
Male	45	45%
Female	55	55%
High Salt Intake	65	65%
Low Physical Activity	58	58%
Smoking	40	40%
Hypertension	62	62%

Table 2. Bivariate Analysis of Lifestyle Factors and Hypertension

Variable	Hypertension (%)	Non-Hypertension (%)	p-value
High Salt Intake	69.2%	30.8%	0.002

Variable	Hypertension (%)	Non-Hypertension (%)	p-value
Low Physical Activity	69.0%	31.0%	0.005
Smoking	75.0%	25.0%	0.001

Table 3. Multivariate Analysis (Logistic Regression)

Variable	OR (Odds Ratio)	95% CI	p-value
High Salt Intake	2.85	1.30–6.20	0.008
Low Physical Activity	2.40	1.10–5.10	0.021
Smoking	3.10	1.40–6.90	0.004

Discussion

The present study revealed that more than half of the respondents were classified as hypertensive, indicating that hypertension remains a prominent health concern at the primary care level. This finding reflects broader global trends, where the burden of hypertension continues to rise, particularly in low- and middle-income countries.

One of the most notable findings in this study is the significant association between high salt intake and hypertension. Respondents with excessive salt consumption were nearly three times more likely to develop hypertension compared to those with normal intake. This observation aligns with previous large-scale studies demonstrating that high sodium intake contributes to increased blood pressure through mechanisms involving fluid retention and vascular resistance. Reducing salt intake has consistently been recommended as one of the most effective non-pharmacological interventions for blood pressure control.

Physical activity also emerged as a significant determinant of hypertension. Individuals with low physical activity levels showed a higher likelihood of developing hypertension. Regular physical activity has been widely recognized for its protective effects on cardiovascular health, including improving endothelial function and reducing arterial stiffness. The findings of this study reinforce the importance of promoting active lifestyles, especially in community settings.

Smoking was identified as the most dominant factor associated with hypertension in the multivariate analysis. Smokers were more than three times as likely to experience hypertension compared to non-smokers. This result is consistent with previous research highlighting the detrimental effects of nicotine and other toxic substances on vascular integrity. Chronic exposure to cigarette smoke can accelerate atherosclerosis and impair vascular function, ultimately leading to elevated blood pressure.

Taken together, these findings underscore the critical role of modifiable lifestyle factors in the development of hypertension. From a nursing perspective, these results emphasize the importance of preventive strategies that focus on behavioral modification. Nurses, particularly those working in primary healthcare settings, are in a strategic position to deliver health education, promote healthy lifestyles, and support patients in managing risk factors.

Furthermore, integrating lifestyle interventions into routine healthcare services may significantly reduce the prevalence of hypertension. Community-based programs, patient counseling, and continuous monitoring are essential components in addressing this growing public health issue.

CONCLUSION

This study demonstrates that lifestyle factors, particularly high salt intake, low physical activity, and smoking habits, are significantly associated with hypertension among adult patients. Smoking was identified as the most dominant risk factor.

These findings highlight the importance of comprehensive lifestyle interventions as part of hypertension prevention and management strategies. Future studies are encouraged to explore additional determinants and apply longitudinal designs to strengthen causal inference.

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