

## **Factors Influencing the Occurrence of Hypertension in the Community in the Working Area of Bahu Health Center, Malalayang District, Manado City**

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Received: 10 October 2025

Received in revised: 10 November 2025

Accepted: 20 December 2025

Available online: 30 Desember 2025

### **Abstract**

*Hypertension is a major risk factor for cardiovascular diseases and often presents without symptoms, leading to delayed recognition until serious complications such as heart dysfunction and stroke occur. Hypertension remains a global public health problem, including in Indonesia. Lifestyle factors, including unhealthy dietary patterns, suboptimal physical activity, and smoking habits, are known to contribute to the development of hypertension. This study aimed to analyze factors influencing dietary patterns, physical activity, and smoking habits associated with the occurrence of hypertension among residents of Bahu Subdistrict VI, Malalayang District, Manado City. This study employed a qualitative approach, with data collected through in-depth interviews and documentation. Informants consisted of adults aged 30–50 years with hypertension and healthcare workers in the working area of Bahu Community Health Center. The findings indicate that lifestyle factors are associated with hypertension among individuals of productive age. Although most informants demonstrated adequate knowledge of hypertension, this knowledge was not fully reflected in healthy behavioral practices. Unhealthy dietary patterns and smoking habits played a significant role in the occurrence of hypertension, whereas physical activity was not identified as a dominant factor.*

**Keywords:** Hypertension, Knowledge, Unhealthy diet, Physical activity, Smoking habits, Community.

### **Abstrak (Indonesian)**

Hipertensi merupakan faktor risiko utama penyakit jantung dan pembuluh darah yang sering tidak bergejala sehingga baru disadari setelah menimbulkan komplikasi serius, seperti gangguan fungsi jantung dan stroke. Hipertensi masih menjadi masalah kesehatan global, termasuk di Indonesia. Faktor gaya hidup, seperti pola makan tidak sehat, aktivitas fisik yang tidak optimal, dan kebiasaan merokok, diketahui berperan dalam terjadinya hipertensi. Penelitian ini bertujuan untuk menganalisis faktor-faktor yang memengaruhi pola makan, aktivitas fisik, dan kebiasaan merokok yang berhubungan dengan kejadian hipertensi pada masyarakat di Kelurahan Bahu Lingkungan VI, Kecamatan Malalayang, Kota Manado. Penelitian ini menggunakan pendekatan kualitatif dengan teknik pengumpulan data melalui wawancara mendalam dan dokumentasi. Informan terdiri dari masyarakat dewasa penderita hipertensi usia 30–50 tahun serta tenaga kesehatan di wilayah kerja Puskesmas Bahu. Hasil penelitian menunjukkan bahwa gaya hidup berhubungan dengan kejadian hipertensi pada usia produktif. Meskipun sebagian besar informan memiliki pengetahuan yang baik tentang hipertensi, hal tersebut belum sepenuhnya tercermin dalam perilaku kesehatan. Pola makan tidak sehat dan kebiasaan merokok berperan signifikan terhadap kejadian hipertensi, sementara aktivitas fisik tidak ditemukan sebagai faktor dominan.

**Kata kunci:** Hipertensi, Pengetahuan, Pola makan tidak sehat, Aktivitas fisik, Kebiasaan merokok, Masyarakat.

## INTRODUCTION

Hypertension is one of the most influential risk factors for the occurrence of heart and blood vessel diseases. Hypertension often shows no symptoms, so it is usually only realized after it has caused organ disorders such as impaired heart function or stroke. It is not uncommon for hypertension to be discovered accidentally during routine health examinations or when patients seek treatment for other complaints. Hypertension remains a global concern, including in Indonesia, and if left untreated, it carries a risk of death (Ministry of Health, 2020).

Hypertension can be caused by several risk factors, including gender, obesity, smoking habits, stress, physical activity, dietary patterns, rest, genetic factors, alcohol consumption, and kidney disease. Individuals with a family history of hypertension have twice the risk of developing hypertension compared to those without such a history (Bekti, 2020). Knowledge about hypertension is essential for patients, and therefore families with hypertensive members must provide proper attention and care to achieve optimal health status (Hasanuddin et al., 2022).

The World Health Organization (WHO) states that in low- and middle-income countries, there are approximately 1.28 billion people aged 30–79 who suffer from hypertension. WHO data (2018) show that about 26.4% of the world's population has hypertension, consisting of 26.6% men and 26.1% women. Around 972 million people, or 26.4% of the global population, suffer from hypertension. This number is expected to increase to 29.2% by 2023. It is estimated that about 9.4 million people die each year due to hypertension and its complications (WHO, 2021). The highest prevalence of hypertension is found in Africa, where 46% of adults aged over 25 are diagnosed with hypertension (WHO, 2021). In Indonesia, the prevalence of hypertension reaches 36%. Based on the Basic Health Research (Riskesdas), the prevalence of hypertension is 34.1% (Ministry of Health of the Republic of Indonesia, 2023).

According to Riskesdas data in 2018, North Sulawesi ranked first among Indonesian provinces with the highest prevalence of hypertension at 13.2%. The prevalence of hypertension in individuals aged 55–64 was 36.87%, aged 65–74 was 45.04%, and aged 75 and above was 46.92% (Ministry of Health of the Republic of Indonesia, 2018; North Sulawesi Riskesdas, 2018). Based on a survey conducted at Bahu Community Health Center in January 2025, there were 553 hypertension cases in 2024 from five villages and 31 neighborhoods. Interviews with three hypertensive patients revealed habits such as frequent consumption of fatty foods, excessive salt intake, and lack of physical activity. Most cases occurred in the 30–50 age group, with average blood pressure readings of 160/100 mmHg, which fall into stage 2 hypertension. Hypertension ranks first among the top ten diseases at Bahu Community Health Center (Bahu Health Center, 2024).

According to Lawrence Green, behavior is influenced by three factors: predisposing factors, including knowledge, attitudes, self-efficacy, and education; enabling factors, including facilities, infrastructure, and distance to health services; and reinforcing factors, including social support, community groups, and health workers. Research by Ademe et al. (2019) indicates that several factors influence self-care behavior in hypertensive patients, including knowledge. Good knowledge can increase self-motivation to practice self-care compared to patients with poor knowledge. Attitude is a closed response to a stimulus and cannot be directly observed but must be inferred from behavior.

Therefore, comprehensive understanding of the disease is necessary, including its risk factors, diagnosis, management, and complications. Social support is also important, as poor social support affects self-care behavior, while good social support encourages proper self-care practices (Ademe et al., 2019). Another study by Pakseresht et al. (2019) states that self-efficacy refers to an individual's belief in their ability to successfully perform certain behaviors. Hypertensive patients with strong self-efficacy are more likely to carry out self-care tasks effectively (Harsono, 2017).

Reducing salt intake and losing weight are the first steps in treating high blood pressure. Limiting salt intake to 60 mmol per day means not adding salt to food. This is difficult to implement because it significantly reduces salt consumption and drastically affects eating habits. Several studies indicate that a low-fat diet can reduce the risk of cardiovascular disease. Regular physical activity can lower peripheral resistance and reduce blood pressure. Other lifestyle changes include avoiding risk factors such as smoking, alcohol consumption, high cholesterol, and stress. Smoking and alcohol increase blood pressure; therefore, avoiding them reduces the risk of hypertension. Relaxation techniques such as meditation, yoga, and other calming practices can help control the autonomic nervous system and lower blood pressure. Additional techniques include gentle massage, warm or cold compresses, comfortable sleeping positions using pillows, distraction through music, deep breathing relaxation, and aromatherapy (Smeltzer, 2019).

## METHODS

This study was designed using a qualitative research approach. This approach was chosen because it is considered appropriate for exploring in depth the factors influencing the occurrence of hypertension among communities in the working area of Bahu Community Health Center, Malalayang District, Manado City. The qualitative approach allows researchers to obtain a comprehensive understanding of community experiences, perceptions, and behaviors related to the causes of hypertension. The study was conducted at Bahu Community Health Center, Malalayang District, Manado City, in June 2025.

The main informants in this study were residents of Bahu Subdistrict, Neighborhood VI, who suffered from hypertension, were aged 30–50 years, and were classified as having stage 2 hypertension (blood pressure  $\geq 160/100$  mmHg), totaling six

individuals. Supporting informants consisted of two health promotion officers from Bahu Community Health Center who had worked for at least one year and were willing to participate in the study.

The interview results showed that all hypertensive informants were familiar with the term “hypertension” through blood pressure measurements using a sphygmomanometer and health education provided by healthcare workers. The informants also mentioned that the causes of hypertension included unhealthy dietary patterns, stress or excessive worrying, and lack of rest. All informants stated that unhealthy diets, such as consuming foods high in salt and fat, had a significant influence on the occurrence of hypertension. They also understood that a healthy diet includes consuming fruits and vegetables and limiting unhealthy foods.

All informants reported routinely engaging in physical activity or exercise. They understood that lack of physical activity could lead to obesity, body pain, and other functional disorders; however, some informants believed that insufficient physical activity did not directly affect the hypertension they experienced. In the long term, informants considered physical activity important for maintaining health and increasing life expectancy.

Most informants were active smokers and had family members who also smoked, while a small number stated that they did not smoke. Informants explained various impacts of smoking, such as coughing, shortness of breath, stroke, and economic consequences due to cigarette expenses.

The research findings were analyzed using the Stimulus–Organism–Response (S-O-R) theory. The stimulus (S) consisted of personal experiences such as high blood pressure, exposure to information through social interactions, and observation of family members suffering from hypertension. The organism (O) referred to the individual’s internalization of these stimuli, including their evaluation of the importance of the information received. The response (R) was manifested in the form of acknowledged knowledge, but was not always followed by consistent preventive actions. This finding is consistent with the study by Wahyuni and Sari (2021), which states that public knowledge about hypertension is often limited to the term “high blood pressure” without comprehensive understanding of its causes, symptoms, and management. Research by Kurniawan et al. (2020) also shows that community knowledge of hypertension is generally obtained from personal experience or the immediate environment rather than formal health education. This condition reflects a gap between experience-based knowledge and scientific information, which may lead to suboptimal hypertension management.

## RESULTS AND DISCUSSION

### A. HASIL

This study involved six main informants who were community members with hypertension aged 30–50 years in Bahu Subdistrict, Neighborhood VI, as well as two supporting informants who were health promotion officers at Bahu Community Health Center. The research data were obtained through in-depth interviews and analyzed using thematic analysis.

#### Knowledge of Hypertension

All main informants were familiar with the term hypertension, which they generally recognized through blood pressure measurements using a sphygmomanometer, personal experiences as patients, and health education provided by community health center staff. The informants stated that hypertension is related to unhealthy dietary patterns, smoking habits, lack of rest, and stress. Supporting informants explained that hypertension is a condition of persistent systolic blood pressure  $\geq 140$  mmHg and/or diastolic blood pressure  $\geq 90$  mmHg. They also emphasized that hypertension education is routinely conducted through health center activities, integrated health posts (Posbindu), and community health volunteer training.

#### Unhealthy Dietary Patterns

All informants stated that unhealthy dietary patterns play a major role in the occurrence of hypertension. Dominant dietary habits included consumption of high-salt foods, fatty foods, and processed meat products. Informants also understood that a healthy diet should include fruits and vegetables and limit salt and fat intake; however, in daily practice, these recommendations had not been consistently implemented. Health promotion officers emphasized that unhealthy dietary patterns are a major factor commonly found among hypertensive patients and remain the primary focus of health education programs.

#### Physical Activity

Main informants reported that they routinely engaged in physical activity or exercise, either through daily work activities or light exercise. They believed that lack of physical activity could lead to obesity, body aches, sleep disturbances, and decreased physical fitness; however, some informants felt that physical activity did not directly influence their hypertension. In contrast, supporting informants stated that insufficient physical activity is a risk factor that can worsen hypertension, especially when combined with unhealthy dietary habits.

#### Smoking Habits

Most main informants were active smokers, while others had family members who smoked. Informants mentioned the impacts of smoking, such as coughing, shortness of breath, stroke, and economic waste. Although not all smokers experience

hypertension, some informants believed that their condition was related to smoking habits. Health promotion officers reported that education on the dangers of smoking is actively delivered through printed media, social media, and direct counseling. They also emphasized that smoking contributes to cardiovascular disorders and increased blood pressure.

## DISCUSSION

### Knowledge as a Predisposing Factor for Hypertension

The study results indicate that informants' knowledge of hypertension is relatively adequate in terms of terminology; however, it has not been fully followed by changes in health behavior. This finding is consistent with the Stimulus–Organism–Response (S-O-R) theory, in which personal experiences and exposure to information serve as stimuli, are internally processed by individuals, and then generate responses in the form of acknowledged knowledge without consistent preventive actions. This condition reveals a gap between cognitive knowledge and behavioral implementation, which may lead to suboptimal hypertension management. Knowledge acquired through personal experience and informal communication does not necessarily shape health behaviors that comply with medical standards.

### The Role of Unhealthy Dietary Patterns in Hypertension

Unhealthy dietary patterns have been shown to be a dominant factor in shaping the lifestyle of individuals with hypertension. Excessive consumption of salt and fat contributes to increased blood volume and vasoconstriction, which subsequently elevates blood pressure. These findings support the theory that excessive sodium and saturated fat intake directly contributes to the pathophysiology of hypertension. Nutritional education provided by health workers is therefore crucial; however, its effectiveness remains influenced by habits, social environment, and community food preferences.

### Physical Activity from a Lifestyle Perspective

Differences in perceptions between main and supporting informants indicate that physical activity is often understood subjectively. Although informants felt that they were sufficiently active, clinically, unstructured and unmeasured physical activity may still be ineffective in preventing hypertension. Theoretically, physical activity plays a role in reducing peripheral resistance, maintaining ideal body weight, and improving cardiovascular function. Therefore, physical activity should be understood not merely as “being active,” but as part of a planned lifestyle intervention.

### Smoking Habits as a Risk Factor for Hypertension

Smoking has been proven to be a significant risk factor that worsens cardiovascular conditions through vasoconstriction and increased cardiac workload. Although not all smokers develop hypertension, smoking habits still increase the risk of hypertension and its complications. Exposure to cigarette smoke, both active and passive, also heightens health risks for family members. These findings emphasize the importance of continuous promotive and preventive interventions, including community-based tobacco control.

## CONCLUSION

The informants in this study consisted of individuals aged 30–50 years. On average, the informants stated that they were familiar with the term hypertension through blood pressure measurements using a sphygmomanometer and health education provided by healthcare workers. Some also mentioned that they were aware of the condition because they themselves suffered from hypertension. In addition, informants stated that the causes of hypertension include unhealthy dietary patterns, smoking habits, lack of rest, and excessive mental stress.

On average, informants had good knowledge and understanding of the risk factors for hypertension, particularly related to unhealthy diets, smoking habits, and insufficient physical activity. However, unhealthy eating patterns often become habitual due to various factors such as lifestyle, environmental influences, and even emotional problems.

Insufficient physical activity can affect obesity, brain function including memory and thinking ability, muscle loss, bone density, body aches, and sleep disturbances. However, informants stated that lack of physical activity did not influence their hypertension because they regularly engaged in physical activity or exercise.

Some informants admitted that they were smokers, while others had family members who smoked, and some were non-smokers. Among the informants, five individuals were smokers, two individuals were occasional smokers, and two individuals did not smoke. However, among those who admitted to smoking, not all developed hypertension; only some experienced hypertension related to smoking.

## ACKNOWLEDGMENTS

The researcher expresses sincere gratitude to all parties who provided support and assistance throughout the research process. In particular, the researcher extends appreciation and heartfelt thanks to everyone who was involved.

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