



BLOOD PRESSURE CONTROL EFFORTS IN HYPERTENSION PATIENTS: AN EXPLORATORY STUDY

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ABSTRACT

Non-communicable diseases (NCDs), especially hypertension, are the leading cause of premature death worldwide, with a high prevalence in low- and middle-income countries. In Indonesia, hypertension poses a major health challenge, particularly in coastal areas where diets are high in sodium. This study aims to explore the efforts made by individuals with hypertension in managing their blood pressure. A qualitative study with a case study approach was conducted in Kluet Selatan, South Aceh, in November 2024. Data were collected through in-depth interviews and focus group discussions (FGDs) involving 12 participants, including hypertension patients, family members, health workers, and community leaders. Data were recorded, transcribed verbatim, and analyzed using thematic analysis to identify patterns and key themes related to hypertension management. The results revealed that patients had initiated dietary changes, increased physical activity, and practiced stress management. However, they encountered challenges such as financial limitations, ingrained eating habits, and restricted access to health facilities. Family involvement and the use of traditional remedies were found to support hypertension control. Despite these efforts, persistent social, cultural, and economic barriers hinder sustainable behavior change. Limited health education and lack of access to specialized care also affect long-term hypertension management in this setting.

Keywords: blood pressure; control efforts; hypertension

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INTRODUCTION

Non-communicable diseases (NCDs) cause the death of 41 million people each year, accounting for 74% of total global deaths (Kurniawan et al., 2024). Every year, around 17 million people die from NCDs before reaching the age of 70, with 86% of these early deaths occurring in low- and middle-income countries (Anggraeni & Susilo, 2024). Overall, 77% of deaths related to NCDs occur in regions with low and middle incomes. Cardiovascular diseases are the leading cause of death from NCDs, with a death toll of 17.9 million annually, followed by cancer (9.3 million), chronic respiratory diseases (4.1 million), and diabetes (Hamzah et al., 2021).

Around 80% of deaths in low- and middle-income countries are caused by non-communicable diseases (NCDs) (Marbun et al., 2021). Of this total, approximately 73% are related to cardiovascular diseases, 35% to cancer, and 15% to other types of NCDs. Furthermore, according to estimates by the World Health Organization, hypertension is expected to be responsible for more than 25% of deaths by 2030, both in developed and developing countries, including Indonesia. In Southeast Asia, including Indonesia, NCDs account for 49.7% of deaths, with hypertension being one of the contributing factors (Yuliyansih, 2024).

Hypertension is a condition in which a person's blood pressure rises beyond the normal range, potentially leading to serious health issues and even death. A person is considered to have

hypertension if their blood pressure exceeds the normal threshold, which is higher than 140/90 mmHg (Ginting et al., 2024; Malem et al., 2024; Marpaung & Trisduita, 2024). Globally, approximately 1.28 billion adults aged 30-79 have hypertension, with two-thirds of them coming from low- and middle-income countries. Around 46% of sufferers are unaware of their condition, while less than half (42%) have received a diagnosis and treatment. Only 21% are able to control their blood pressure. Hypertension is one of the leading causes of premature death (Herlinah et al., 2024).

In Indonesia, 34.11% of the population suffers from hypertension, with the highest prevalence found in South Kalimantan Province at 44.13%, followed by West Java Province at 39.60%. Meanwhile, Aceh Province has a hypertension prevalence rate of 26.45% (Harahap et al., 2024). People living in areas with high salt levels in water and food tend to experience hypertension more frequently compared to those living in regions with high calcium and magnesium levels. The main foods commonly consumed by coastal communities include shrimp (containing 111 mg of sodium per 100 g), squid (306 mg of sodium per 100 g), shellfish (1,202 mg of sodium per 100 g), and various types of seafood (Amin et al., 2024; Ekaningrum, 2021).

Most cases of hypertension today are caused by unhealthy lifestyles, such as a diet high in fat and low in fiber, as well as consumption that does not align with recommended guidelines (Agita & Wijayanti, 2022). One of the triggers of hypertension is the accumulation of fat on the walls of blood vessels. In daily life, fat serves as an energy source, insulation to maintain body temperature, and as a solvent for vitamins A, D, E, and K to be absorbed by the body. However, excessive fat intake can trigger various diseases (Adinda & Muthmainnah, 2023). The use of coconut in cooking has been a long-standing tradition in Indonesia and continues to this day. Coconut milk, often used as a base in dishes, is considered one of the causes of vascular diseases due to its high content of saturated fatty acids. The Health Belief Model (HBM) is a theory that explains how a person's beliefs about health can influence their behavior, particularly in terms of disease prevention and treatment (Nadhilah, 2023). This study aims to explore the efforts made by individuals with hypertension in controlling their blood pressure.

METHOD

This study is a qualitative research with a case study approach conducted in the coastal area of South Kluet, South Aceh Regency, from November 8–20, 2024. Primary data were directly collected by the researcher through interviews and focus group discussions, while secondary data were obtained from various sources such as the Central Statistics Agency (CSA), books, reports, journals, and other relevant documents. The informants in this study consisted of 6 male and 6 female individuals with hypertension (through Focus Group Discussions), 3 family members of the patients, 1 healthcare worker, and 1 community leader (through in-depth interviews).

The selection of informants was done using purposive sampling with the following criteria: adult hypertension patients aged 30-60 years registered at the South Kluet Health Center, with systolic blood pressure ≥ 140 mmHg and diastolic blood pressure ≥ 90 mmHg, having had hypertension for more than 3 years, and without any other diagnosed diseases. Data were collected through interviews and Focus Group Discussions (FGD). This study is a qualitative research with a case study approach conducted in the coastal area of South Kluet, South Aceh Regency, from November 8–20, 2024. Primary data were directly collected by the researcher through interviews and focus group discussions, while secondary data were obtained from various sources such as the Central Statistics Agency (CSA), books, reports, journals, and other relevant documents. The informants in this study consisted of 6 male and 6 female

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RESULT

The informants in this study were adult hypertension patients aged 30-60 years who were registered at the South Kluet Health Center, South Aceh Regency, with a systolic blood pressure ≥ 140 mmHg and diastolic blood pressure ≥ 90 mmHg. They had also been living with hypertension for more than 3 years and had no other diagnosed diseases. Based on these criteria, 12 hypertension patients, 3 family members, 1 community leader, and 1 healthcare worker were selected as informants, with varied backgrounds in terms of age, education, duration of hypertension diagnosis, and origin.

Table 1.
Characteristics of informants

Informant Code	Age (Years)	Gender	Education	Time to Detect Hypertension	Origin
IFL 1	40	Man	Senior High School	3 years	Indra Damai
IFL 2	52	Man	Vocational School	5 years	Indra Damai
IFL 3	47	Man	Senior High School	3 years	Suak Bakong
IFL 4	50	Man	Junior high school	7 years	Suak Bakong
IFL 5	53	Man	Junior high school	6 years	Ujung Padang
IFL 6	39	Man	Senior High School	3 years	Ujung Padang
IFP 1	40	Woman	Senior High School	3 years	Lembang
IFP 2	47	Woman	Senior High School	3 years	Lembang
IFP 3	44	Woman	Senior High School	5 years	Kapeh Village
IFP 4	49	Woman	Islamic Senior High School	5 years	Kapeh Village
IFP 5	55	Woman	Junior high school	7 years	Sialang
IFP 6	50	Woman	Senior High School	5 years	Sialang
TK	49	Woman	Diploma III	-	Suak Bakong
AK 1	52	Man	Senior High School	-	Kapeh Village
AK 2	27	Woman	Bachelor	-	Suak Bakong
AK 3	35	Woman	Bachelor	-	Ujung Padang
TM 1	50	Man	Senior High School	-	Indra Damai
TM 2	37	Woman	Bachelor	-	Suak Bakong

This study explores the understanding and experiences of hypertension patients in the South Kluet coastal area regarding hypertension management, which includes healthy eating habits, physical activity, stress management, the use of traditional medicine, as well as social and family support. Regarding healthy eating habits, hypertension patients in this area demonstrated awareness of changing their diets after being diagnosed. They began reducing their intake of salty foods, high-fat foods, and coconut milk, while increasing their consumption of vegetables and fruits. However, the challenges they faced included difficulty in changing eating habits, limited knowledge about healthy foods, and economic and environmental factors. The role of the family is crucial in supporting dietary changes by providing healthy ingredients and assisting with cooking according to medical recommendations.

"I now eat more vegetables and fruits, like tomatoes, carrots, and watermelon. Mmmm, I also reduce my consumption of fried foods. Aaaa, I can feel the difference, I feel healthier." (IFL4, 2024, March 20)

Regarding physical activity, many hypertension patients have increased their physical activity, such as walking and light exercise. However, they often face barriers such as time constraints and fatigue after work, which hinder their exercise routine. Family support, such as reminding and accompanying them in physical activities, helps to boost the patients' motivation to be more active.

"I do light exercise like walking or exercising at home with other family members, aaaa. It's not always routine, mmmm, but I try to set aside time every morning. Well, even though it's not always, I feel healthier after doing it." (IFL 4, 2024, November 20)

Regarding stress management, the stress experienced by hypertension patients is largely related to work issues, finances, and concerns about their health. To manage stress, many rely on spiritual activities, such as praying and reading the Qur'an, as well as physical activities like walking and gardening. Family and community also play a vital role in helping patients reduce stress through social activities like gathering with neighbors or walking together.

"Stress usually comes from financial problems or my unstable health, aaaa, that's what often makes me anxious. But, I try to relax, yes, by managing my time so that I can rest properly. Sometimes, I also talk to friends or family, and that helps a lot to reduce my anxiety." (IFL 3, 2024, November 20)

Regarding the use of traditional medicine, some hypertension patients choose to use traditional remedies as a supplement to medical treatment, such as soursop leaves, garlic, and ginger, which are considered more natural and have minimal side effects. However, the use of traditional medicine does not replace medical therapy but serves as an additional measure to control blood pressure. The community still views traditional medicine as a safer alternative and has used it for generations.

"I, aaa... use traditional medicine like soursop leaves and garlic. I learned about this remedy from my friends in the village who have been using it." (IFL 4, 2024, November 20)

Regarding social and family support, family support is crucial in managing hypertension. Families play a role in supporting healthy eating habits, encouraging physical activity, and ensuring regular health check-ups. This support also increases the patients' motivation to maintain stable blood pressure. Additionally, the role of community leaders in raising awareness about the importance of a healthy lifestyle and hypertension management also has a positive impact.

"We support each other by maintaining healthy diets and exercising together. I also always remind them to avoid foods that are high in salt and ensure they regularly check their blood pressure." (AK 3, 2024, November 20)

Regarding access to healthcare services, access to healthcare, especially at the public health center (puskesmas), is relatively easy for hypertension patients in this area. However, for more specialized care, such as consultations with specialists, patients need to travel to the city, which takes about an hour. This is often a challenge for them, particularly in terms of time and cost.

"Going to the puskesmas here is quite easy and close, aaaa, not difficult. But, if I want to go to a specialist, I have to go to Taluk, to the hospital, and that takes about an hour's journey. So, it's quite far if I want to see a specialist." (IFL 3, 2024, November 20)

Regarding health education and counseling, health education about hypertension in this area is mainly conducted through the monthly poswindu program. Although the information provided is still general, some informants mentioned that they received basic information about healthy eating and how to recognize the symptoms of hypertension through the program. However, many patients felt that the information provided was not in-depth, so they had to seek more information independently.

"What I mean by non-formal methods is that it doesn't necessarily involve giving specific education, but by holding meetings at poswindu, during which we provide information about nutrition to the community or hypertension patients." (TK, 2024, November 15)

This study explores hypertension management efforts in coastal areas, focusing on factors such as diet, physical activity, stress management, traditional medicine, social support, healthcare access, and health education. The Health Belief Model (HBM) theory is used to understand community behavior through components such as perceived benefits, perceived barriers, and cues to action.

DISCUSSION

The results of the study show that the community has started to reduce their consumption of salt, fat, and fried foods, but they face barriers such as financial constraints, family habits, social influences, and local culture. Although efforts to increase physical activity and stress management are present, healthy habits have not been consistently applied. The use of traditional medicine and family support are factors that contribute positively, but limited access to healthcare services and sporadic health education remain the main challenges in managing hypertension in coastal areas. A healthy diet is one of the most effective lifestyle interventions for controlling blood pressure. A combination of a healthy diet and physical activity has been shown to significantly reduce both systolic and diastolic blood pressure (Krishnamoorthy et al., 2023). Recommended diets, such as the Dietary Approaches to Stop Hypertension (DASH) diet, have proven to be effective in lowering blood pressure in individuals with hypertension (Valenzuela et al., 2021). Regular physical activity is a key component in hypertension management. Physical exercise not only helps control body weight but also improves vascular health and reduces sympathetic activation. Studies have shown that the combination of a healthy diet and physical activity has the highest probability of being the most effective intervention to lower blood pressure (Malem et al., 2024).

Stress management also plays a crucial role in controlling hypertension. Although there is limited strong evidence regarding the antihypertensive benefits of stress management techniques, certain forms of psychological stress, such as post-traumatic stress disorder, appear to be associated with a higher risk of hypertension (Conversano et al., 2021; Larionov, 2021). The use of traditional and herbal medicine as part of self-care practices has been identified in several studies in Southeast Asia. However, there is individual variation in the application of these practices, and it is important to consider cultural and environmental factors in hypertension management (Irwan et al., 2022). Social and family support play an important role in hypertension management. Community-based interventions involving public health workers and peer support have proven effective in improving blood pressure control in underserved communities (Islam et al., 2023). Support from family and community can enhance adherence to treatment and lifestyle modifications (Konlan & Shin, 2023).

Efforts to control blood pressure in hypertensive patients are a complex challenge, especially in coastal areas. Communities have started reducing their consumption of salt, fat, and fried foods as part of lifestyle modifications to lower blood pressure. However, these efforts are often hindered by financial constraints, family habits, social influences, and local culture (Cernota et al., 2022; Fu et al., 2020; Mills et al., 2018). Although there are efforts to increase

physical activity and stress management, the adoption of healthy habits has not been consistent (Krishnamoorthy et al., 2023). The use of traditional medicine and family support can be significant factors in hypertension management (Fahey et al., 2003). However, limited access to healthcare services and sporadic health education remain major challenges (Bernardes et al., 2023). Interventions involving healthcare professionals, such as pharmacists and public health workers, have been shown to be effective in reducing blood pressure and should be prioritized in future efforts to manage hypertension (Mills et al., 2024). Additionally, a combination of a healthy diet and physical activity has shown significant results in lowering blood pressure (Barone Gibbs et al., 2021; Park et al., 2020).

CONCLUSION

This study shows that although individuals with hypertension in the coastal region of Kluet Selatan are aware of the importance of a healthy diet, physical activity, stress management, and the use of traditional medicine to manage blood pressure, they face various challenges such as financial limitations, difficulty changing eating habits, and limited access to healthcare services. The role of family is crucial in supporting healthy lifestyle changes, from providing healthy food to offering emotional support. Physical activity and stress management are also efforts made, despite challenges related to time and fatigue. While healthcare services at the community health center are available, limited access to advanced facilities remains a significant challenge. The limited health education also affects the public's knowledge and understanding of hypertension. Future researchers are encouraged to broaden the scope of their studies by involving more informants from diverse backgrounds in coastal areas to obtain richer and more comprehensive data.

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