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**ANALYSIS OF NURSING PRACTICE IN CLIENTS WITH
VASCULAR SYSTEM DISORDERS: PRIMARY CASE OF
HYPERTENSION THROUGH EDUCATIONAL
INTERVENTION USING THE BOOKLET "LET'S PREVENT
HYPERTENSION"**

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Analysis of Nursing Practice in Clients with Vascular System Disorders: Primary Case of Hypertension through Educational Intervention Using the Booklet “Let’s Prevent Hypertension”

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ABSTRACT

Background: Hypertension is one of the most prevalent vascular system disorders and a major global health concern, contributing to increased morbidity and mortality rates. In Indonesia, poor knowledge, low treatment adherence, and unhealthy lifestyle behaviors remain significant barriers to optimal blood pressure control. Nurse-led educational interventions are essential in improving patient self-management. Booklet-based education offers a practical and accessible medium to enhance understanding and promote behavioral change.

Objective: This case study aimed to analyze nursing practice in a client with hypertension through the provision of booklet-based health education titled “Let’s Prevent Hypertension”.

Methods: A case study design was conducted at Pusri Hospital Palembang involving one inpatient client with a confirmed diagnosis of hypertension. The intervention consisted of structured education sessions using the booklet over one week, covering the definition, risk factors, prevention strategies, diet recommendations, and lifestyle modifications. Data were collected through interviews, observation, and blood pressure monitoring before and after the intervention.

Results: The intervention led to improved patient knowledge, increased adherence to dietary and lifestyle recommendations, and a reduction in blood pressure readings.

Conclusion: Booklet-based education effectively supports hypertension self-management. Integrating culturally adapted, nurse-led booklet interventions into routine care is recommended to improve clinical outcomes.



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INTRODUCTION

Elderly individuals, defined as those aged sixty years or older according to Law Number 13 of 1998 concerning the Welfare of the Elderly, represent a growing population both globally and in Indonesia. Since 2018, the elderly population in Indonesia has been projected to increase at a faster rate than the global average. Age-related physiological decline contributes to a higher prevalence of non-communicable diseases among older adults, while degenerative processes also reduce their resistance to infections and other communicable diseases (Mohi et al., 2024).

Hypertension is one of the most common diseases in the elderly. It is clinically defined as a systolic blood pressure of at least 140 mmHg and/or diastolic blood pressure of at least 90 mmHg. According to the World Health Organization (WHO), normal systolic blood pressure in adults is approximately 120 mmHg, measured when the heart contracts to pump blood throughout the body, while normal diastolic blood pressure is around 80 mmHg, measured when the heart muscle relaxes and receives returning blood (Siregar et al., 2024).

The WHO estimates that by 2025, 1.5 billion people will have hypertension, with around 10.4 million deaths annually caused by hypertension and its complications. In Southeast Asia, the prevalence reaches 36%. In Indonesia, epidemiological transition has shifted the disease burden toward chronic degenerative conditions. Based on the 2018 Basic Health Research (Riskesdas), the prevalence of hypertension among individuals aged ≥ 18 years was 34.1%, with the highest rate in

South Kalimantan (44.1%) and the lowest in Papua (22.2%). The estimated number of hypertension cases nationwide is 63,309,620, with 427,218 related deaths annually. The prevalence is particularly high in the 55–64 years age group (55.2%). Surveillance data in DKI Jakarta (2019) also reported a hypertension prevalence of 34.1% and diabetes prevalence of 3.4% (Pakpahan et al., 2024).

Hypertension is a major risk factor for other diseases, including stroke, heart failure, and myocardial infarction. Often referred to as a silent killer, it is frequently asymptomatic until serious complications arise, such as multi-organ dysfunction involving the kidneys, eyes, and brain, which may lead to disability or death. Although hypertension cannot be cured and requires lifelong treatment, effective control is essential to prevent complications such as kidney failure, heart failure, and stroke. Risk factors for hypertension complications include advanced age, unhealthy lifestyle, and poor medication adherence, highlighting the importance of promotive efforts such as community education for older adults (Gianevan & Puspita, 2023).

Management strategies—such as adherence to dietary recommendations, consistent use of antihypertensive medication, and lifestyle modifications—are crucial for controlling blood pressure in the elderly and preventing recurrence. Support and motivation from families, healthcare professionals, and community health workers play a vital role. While health promotion programs often focus on at-risk populations without the disease, individuals already diagnosed with hypertension also require targeted education. One effective approach is health education using booklets, which can enhance patient understanding and encourage adherence to management plans (Kusuma et al., 2020).

A preliminary study conducted with the Head of the Nusa Indah Inpatient Ward at Pusri Hospital Palembang revealed that in 2022, there were 318 hypertension cases. In September and October 2023 alone, 110 cases were reported, with many patients—particularly elderly individuals—experiencing recurrence and requiring repeated treatment. This was largely attributed to limited patient and family knowledge regarding hypertension prevention.

This report presents two elderly hypertension cases with a history of recurrence and dependence on antihypertensive drugs. Due to poor dietary compliance, unhealthy eating patterns, and inadequate family awareness, an evidence-based nursing intervention—educational counseling using the booklet “Let’s Prevent Hypertension”—was implemented in the Nusa Indah Inpatient Ward at Pusri Hospital Palembang. The outcomes were analyzed and compared to assess the effectiveness of booklet-based education in managing hypertension in elderly patients.

RESEARCH METHODS

This study employed a case study method to analyze nursing practice for a client with a vascular system disorder, specifically hypertension, at Pusri Hospital Palembang. The case study focused on one inpatient client who met the inclusion criteria: being over 18 years of age, having a confirmed hypertension diagnosis, being in stable condition, having no cognitive impairment, and providing informed consent to participate. The nursing intervention was implemented over a one-week period and centered on providing health education through the booklet “Let’s Prevent Hypertension”. The booklet content included information on the definition of hypertension, risk factors, preventive measures, dietary recommendations, and lifestyle modifications, all adapted to the patient’s cultural context. Data were collected through interviews, direct observations, and physical examinations. Pre- and post-intervention assessments were carried out to evaluate changes in the client’s knowledge level, lifestyle adherence, and blood pressure control. Data were analyzed descriptively, comparing findings before and after the educational intervention to determine its impact on the client’s self-management and clinical outcomes.

RESULTS AND DISCUSSION

This chapter describes the implementation of nursing care for a client with a medical diagnosis of hypertension in the Nusa Indah Ward at Pusri Hospital, carried out from October 9, 2023, to October 21, 2023. The nursing care was implemented in stages, beginning with assessment, formulation of nursing problems, nursing care planning, implementation, and evaluation of nursing interventions, collectively referred to as the nursing process. The details of these stages are described in the following sections.

Table 1. Case Characteristics

No.	Patient Code	Age	Blood Pressure	Pulse Rate (x/min)	Respiratory Rate (x/min)	Temperature (°C)	Laboratory Results	Treatment Date
1	Mrs. W	65 years	182/110 mmHg	107	21	36,5°C	Hematology	9-12 October 2023
2	Mr. M	68 years	200/112 mmHg	109	22	36,8°C	Hematology	16-19 October 2023

Based on Table 1, data from the health history assessment of Patient 1 and Patient 2 revealed similarities in the main complaints, namely dizziness, nausea, and vomiting. In the present illness history, both Patient 1 and Patient 2 had previously been hospitalized for the same condition, hypertension. In the past medical history, Patient 1 had a history of hypertension for the past four years and had been hospitalized approximately nine months ago due to hypertension. Patient 2 had a history of uncontrolled hypertension for the past two years and had also been hospitalized. In the family medical history, the family of Patient 1 reported no hereditary diseases such as hypertension, asthma, diabetes mellitus, and others. Meanwhile, the family of Patient 2 reported that Mr. M's father had a history of hypertension and diabetes mellitus.

Based on the assessment findings for both patients, the author identified nursing diagnoses according to the priority problems found, namely: ineffective peripheral perfusion related to increased blood pressure, activity intolerance related to weakness, and knowledge deficit related to lack of information about hypertension.

The nursing care was carried out from October 9 to October 16, 2023. The implementation of the educational intervention using the booklet "Let's Prevent Hypertension" took place on October 11, 2023, for Patient 1 and October 15, 2023, for Patient 2. This education was provided to elderly patients with hypertension and their family members living in the same household.

Prior to the education session, the patient and family's understanding of hypertension was assessed. The results showed confusion and limited knowledge regarding treatment steps, proper nutrition and diet, adherence to medication regimens, and healthy lifestyle practices to prevent hypertension. Knowledge was measured using a questionnaire containing 15 questions related to hypertension prevention. The questionnaire was administered before the educational intervention.

Subsequently, a comprehensive education session was conducted using the "Let's Prevent Hypertension" booklet for approximately 30 minutes. This was followed by a question-and-answer session and feedback was provided to both the patient and their family. After the session, a re-assessment was performed to evaluate the extent of understanding gained. The results indicated that the patient and family were able to explain the nature of hypertension, prevention methods, nutritional and dietary recommendations, medication regimens, and healthy lifestyle habits.

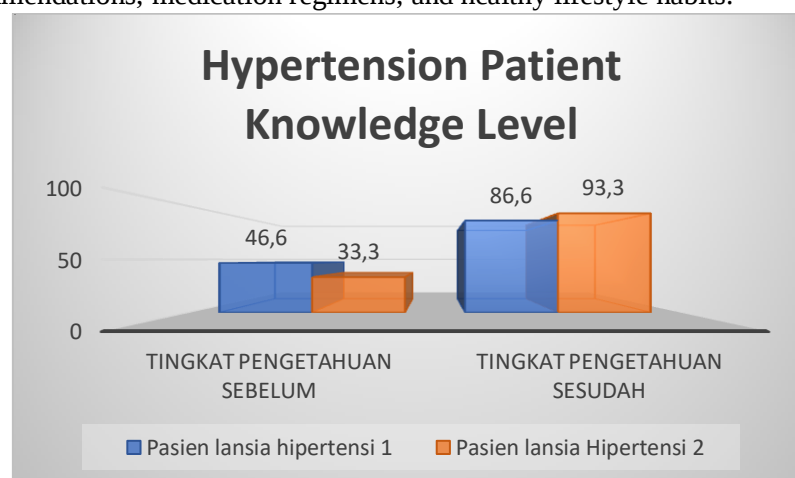


Figure 1 Comparison Graph of Knowledge Levels Before and After Education

Based on Figure 1, before the education was conducted, the knowledge level scores of patient 1 and patient 2 were 46.6% and 33.3%, respectively. Both patients fell into the poor knowledge category. After receiving the education, there was an increase in the knowledge scores to 86.6% for patient 1 and 93.3% for patient 2. Both patients then fell into the good knowledge category. This indicates that the comprehensive education using the booklet media titled “Let’s Prevent Hypertension” had a positive effect on both patients.

The assessment continued by measuring the knowledge level scores of the families of the hypertension patients. According to Figure 2, before the education, the knowledge score of patient 1’s family was 66.6%, categorized as moderate knowledge level, while patient 2’s family scored 53.3%, categorized as poor knowledge level.

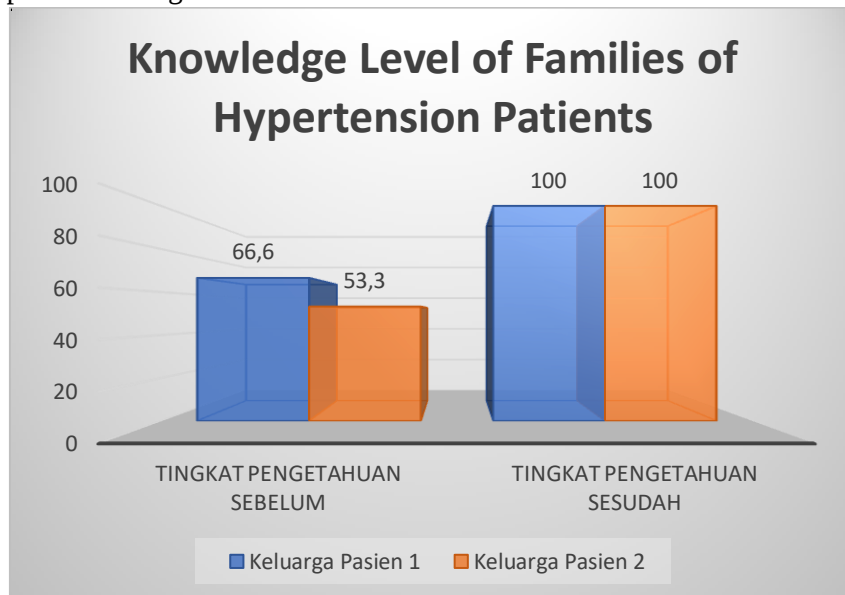


Figure 2. Knowledge Level of Families of Hypertension Patients

After the education was provided, the knowledge scores of the families of patient 1 and patient 2 increased to 100%. Both families were then classified in the good knowledge category. This shows that comprehensive education using the booklet media “Let’s Prevent Hypertension” had a positive impact on both patients’ families.

The number of hypertension cases at Nusa Indah Ward, PUSRI Hospital, reached 421 patients in 2022. In September 2023 alone, there were 73 reported cases. One of the causes of chronic hypertension is the lack of information about hypertension prevention at home. This lack of knowledge often results in patients experiencing increased blood pressure. Such conditions may lead to further complications including heart disease, stroke, kidney failure, and others.

In the case of patient 1, the family reported that the patient did not follow any specific diet such as a low-salt diet. The patient consumed the same meals prepared by other family members without distinction. The patient preferred Padang rice dishes rich in coconut milk and also liked fried snacks. Fruit consumption was rare and only occurred during certain seasons. In the case of patient 2, the family indicated poor adherence to the prescribed medication regimen. The patient sometimes felt tired of taking medication daily and continued to be an active smoker. Due to addiction, the patient found it difficult to quit smoking. The patient also favored fatty foods and did not follow a special diet; whatever other family members ate, the patient ate the same. Therefore, relapse factors in these cases may be caused by insufficient knowledge of both patients and their families regarding hypertension.

Age can influence an individual's health status, according to Lawrence Green's theory (1980). One of the risk variables that can influence a person's behavior and ultimately their health condition is age. Green stated that knowledge grows with increasing age as a person gains more experience with

various objects. As age advances, knowledge increases, and if a person engages in healthy activities, their health condition will improve. However, even with good knowledge, unhealthy lifestyles and behaviors may still lead to health problems in the individual (Mohi et al., 2023).

Hypertension in the elderly often presents as isolated systolic hypertension, characterized by an increase in systolic blood pressure accompanied by a decrease in diastolic blood pressure. This condition results from changes in the structure of major blood vessels, which become less elastic and stiffer. The increased systolic blood pressure is caused by arterial stiffness and reduced elasticity of the aorta. Stiffening of the vessel walls leads to narrowing of blood vessels, reducing blood flow to tissues and organs. Consequently, systolic pressure rises to ensure adequate blood flow to the body's tissues and organs (Siregar et al., 2024).

Several factors influence hypertension, including age, gender, education, genetics/family history, unhealthy diet, irregular physical activity, obesity, alcohol consumption, smoking habits, stress, coffee consumption, and irregular blood pressure monitoring. Blood pressure tends to increase with age. The risk of high blood pressure is rising among children and adolescents due to increasing rates of overweight and obesity. Men are at higher risk than women for developing high blood pressure during middle age. However, in older adults, women have a higher risk of hypertension than men. Behavior is one of the critical factors in hypertension prevention. Health behavior refers to an individual's response to stimuli or objects related to illness, health services, food and beverages, and the environment. Preventing hypertension through healthy behaviors such as consuming low-fat foods, fruits, and vegetables high in fiber can help reduce blood pressure. The recommended daily salt intake is less than 1500 mg (Crystandy et al., 2024).

Hypertension is also known as "The Silent Killer" because patients often do not realize they have high blood pressure until complications arise. If hypertension is not promptly managed, consequences may include stroke, retinopathy, coronary heart disease, heart failure, and chronic kidney disease. Prolonged high blood pressure can damage vital organs such as the kidneys (resulting in kidney failure), heart (coronary heart disease), and brain (leading to stroke), especially if not detected and treated early (Sasongko, 2024).

An individual's or community's health is influenced by two main factors: behavioral causes and non-behavioral causes. Behavior itself is shaped by three types of factors: predisposing factors, enabling factors, and reinforcing factors. Predisposing factors originate within the individual and include age, gender, income, occupation, knowledge, attitudes, beliefs, values, and so forth. Enabling factors refer to physical environmental conditions, availability or absence of health facilities such as clinics and medications. Reinforcing factors come from external sources and manifest as attitudes and behaviors of healthcare providers. In summary, a person's or community's health behavior is determined by knowledge, attitudes, beliefs, traditions, and other related factors. Additionally, the availability of facilities and the attitudes and behaviors of health workers also support and strengthen behavior formation (Crystandy et al., 2024).

Hypertension management involves both pharmacological and non-pharmacological approaches. Treatment and prevention generally include the use of synthetic chemical drugs or pharmacological methods. Non-pharmacological therapies involve lifestyle modifications such as dietary changes, increased physical activity, smoking cessation, and limiting alcohol consumption (Sasongko, 2024).

After education was provided to patients 1 and 2, their understanding of hypertension improved. All patients were able to explain how to prevent hypertension, proper diet, and therapy regimens. The patients' families were very responsive and able to understand the education given. It is expected that after receiving the education, the families will provide support to maintain the patients' blood pressure through healthy food choices, appropriate physical activity, and help patients maintain a healthy lifestyle and adequate exercise.

CONCLUSION

Comprehensive education using the booklet “Let’s Prevent Hypertension” proved effective in improving the knowledge levels of hypertension patients and their families. Prior to the education, both patients and their families had low to moderate knowledge levels, but after the intervention, significant improvements were observed, with family knowledge scores reaching 100%. Increased knowledge is expected to support healthy behavior changes such as low-salt diets, smoking cessation, and adherence to medication regimens, which ultimately contribute to optimal hypertension management and prevention of further complications. Age and lifestyle factors play crucial roles in influencing the health status of hypertension patients. Therefore, educational interventions involving patients and families, along with support from their environment, are essential for effective hypertension prevention and management.

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