



Case Study

Nursing Care for Elderly Families with Hypertension Using Educational Combination Therapy and Bay Leaf Tea Administration to Lower Blood Pressure

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Article Info

Received: October 24, 2025

Revised: June 2, 2026

Accepted: June 10, 2026

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Cite this as:

Aprilliawan., M. H. I.,
Ubudiyah., M., Suhariyati.
Nursing Care for Elderly
Families with Hypertension
Using Educational
Combination Therapy and
Bay Leaf Tea
Administration to Lower
Blood Pressure. *Indonesian
Journal of Nursing Case
Studies (IJNCS)*. 1 (1)

ABSTRACT

Background: Hypertension is one of the chronic diseases that many elderly people experience and is often caused by an unhealthy lifestyle and lack of knowledge about blood pressure management. The family nursing approach plays an important role in helping patients control blood pressure through health education and complementary therapies that are appropriate to the community's conditions.

Case Presentation: This study was conducted on three elderly clients, namely Mr. N, Mr. M (1), and Mr. M (2) in Sumberkerep Village, Mantup District, Lamongan Regency, who experienced hypertension with the main complaint of headache in the morning. All three have a habit of eating high in salt and do not understand the complications and management of hypertension.

Nursing Intervention: Nursing interventions were conducted for three consecutive days through a combination of health education using leaflets and daily administration of bay leaf tea. Education was provided to the patient and family regarding a hypertension diet, physical activity, and blood pressure management. Outcomes were evaluated by measuring blood pressure and headache intensity before and after the intervention. The results showed a reduction in blood pressure and a decrease in headache intensity from moderate to mild.

Conclusion: The combination of health education and bay leaf tea therapy has been shown to be effective in lowering blood pressure and improving family understanding of hypertension management. This intervention can be used as an alternative to an evidence-based family nursing approach that is easy to apply in the community. Further research with a longer time and a larger number of respondents is needed to reinforce these results.

Keywords: complementary therapies; family nursing; health education; hypertension; *syzygium polyanthum*

INTRODUCTION

Hypertension or high blood pressure is one of the most common health problems, especially in the elderly age group. As life expectancy increases and the elderly population increases, the prevalence of hypertension also continues to increase globally, including in Indonesia. According to the data World Health Organization (WHO), around 60–70% of the elderly suffer from hypertension, making it one of the main risk factors for morbidity and mortality in the elderly age group [1].

Hypertension in the elderly has special characteristics compared to the younger age group. The elderly generally experience a more dominant increase in systolic blood pressure, known as isolated systolic hypertension (ISH), which is caused by physiological changes such as decreased elasticity of blood vessels and increased peripheral resistance. These changes are part of the natural aging process that cannot be avoided, thus increasing susceptibility to serious complications such as stroke, coronary heart disease, kidney failure, and cognitive impairment [2].

Globally, the number of people with hypertension continues to increase every year. The WHO estimates that there are about 1.13 billion people suffering from hypertension, and this number will continue to grow until it reaches 1.5 billion by 2025. Every year, about 9.4 million people die from hypertension and its complications [3].

At the regional level, the prevalence of hypertension in East Java Province is also increasing. Lamongan Regency is included in the area with a high number of hypertension cases. Based on data from the Lamongan Regency Health Office (2025), there are more than 48,000 cases of hypertension recorded in health care facilities. However, the level of public awareness to conduct routine blood pressure checks is still low, especially in rural areas. Lack of knowledge about risk factors such as excessive salt consumption, lack of physical activity, stress, and unhealthy lifestyle habits also worsen the condition [4].

Clinically, hypertension is a major risk factor for cardiovascular diseases in older adults, including stroke, coronary artery disease, and heart failure. Persistent elevation of blood pressure can lead to cardiac enlargement, reduced cardiac function, fatigue, dyspnea, and a significant decline in quality of life. In addition to pharmacological treatment, complementary interventions are increasingly used to support blood pressure control. Among various complementary therapies, bay leaf tea (*Syzygium polyanthum*) was selected because it is inexpensive, readily available, easy to prepare, and widely accepted in the community. Furthermore, bay leaves contain bioactive compounds such as flavonoids, tannins, and essential oils that exhibit antioxidant, vasodilatory, and mild diuretic effects, which may contribute to blood pressure reduction. Compared with other complementary interventions, bay leaf tea offers a practical and culturally appropriate option for family-based nursing care in community settings [5].

Seeing these conditions, a more proactive and holistic approach is needed from health workers, especially nurses, in overcoming the problem of hypertension in the elderly. The family nursing approach is important because the family has a big role in supporting medication adherence, dietary arrangements, and lifestyle changes [6]. Nonpharmacological interventions such as health education and the administration of bay leaf tea (*Syzygium polyanthum*) can be an effective alternative in helping to lower blood pressure [7]. The content of flavonoids and essential oils in bay leaves is known to have diuretic and vasodilating effects that can lower blood pressure naturally [8].

Therefore, this study focuses on the application of family nursing care with combination therapy of education and the administration of bay leaf tea to lower blood pressure in the elderly with hypertension in Sumberkerep Village, Mantup District, Lamongan Regency. This approach is expected to provide an overview of the effectiveness of family-based nursing interventions in controlling blood pressure and improving the quality of life of the elderly.

CASE PRESENTATION

Patient Information

The patients in this case study consisted of three elderly people with a medical diagnosis of hypertension, namely Mr. N was 68 years old, Mr. M1 was 65 years old, and Mr. M2 was 63 years old. All three are men, Muslims, and married. They live in Sumberkerep Village, Mantup District, Lamongan Regency, with their respective families in a permanent house with clean environmental conditions, good ventilation, and adequate household sanitation. The water source used comes from wells and the waste disposal system is carried out by burning.

Socio-economically, Mr. N works as a teacher, while Mr. M1 and Mr. M2 work as farmers. All three have harmonious family relationships and good social support from family members in the process of daily care. All patients have a history of hypertension for more than one year, but have not routinely had blood pressure checks at health facilities. No history of severe comorbidities such as diabetes mellitus, coronary heart disease, or kidney failure was found. However, the patient's daily diet tends to be high in salt and low in fiber, and the physical activity carried out is still limited due to age and work that does not require much movement.

When the initial assessment was carried out, the three patients appeared to be in good general condition and fully conscious with a GCS score of 15. The results of the examination of vital signs showed that the blood pressure of the three was in the high category. Mr. N had a blood pressure of 184/97 mmHg with a pulse of 74 times per minute, Mr. M1 had a blood pressure of 175/90 mmHg with a pulse of 75 times per minute, and Mr. M2 had a blood pressure of 170/107 mmHg with a pulse of 113 times per minute. All patients had a breathing rate of 20 times per minute and a body temperature of 36°C.

The main complaint felt by all patients is back pain with a moderate pain scale, especially in the morning after waking up. In addition, patients also complain of feeling tired easily, sometimes palpitations, and experiencing sleep disturbances. The results of the interviews showed that the three patients and their families did not have a deep understanding of hypertension, aggravating risk factors, and how to control it through lifestyle changes.

Psychologically, the three patients showed concern about their health condition because they were afraid of experiencing serious complications such as stroke or heart disease. However, family support is relatively good. The patient's wife and children were actively involved in educational activities and helped prepare the bay leaf tea drink given as part of the intervention. Family involvement is one of the important factors in the success of the family nursing care program implemented.

Clinical Findings

Based on the results of the initial examination, the three patients showed vital signs that indicated an increase in blood pressure. At the time of the study, Mr. N had a blood pressure of 184/97 mmHg with a pulse rate of 74 times per minute, a breathing rate of 20 times per minute, and a body temperature of 36°C. Mr. M1 showed blood pressure of 175/90 mmHg with a pulse of 75 times per minute, a breathing rate of 20 times per minute, and a temperature of 36°C. Meanwhile, Mr. M2 has a blood pressure of 170/107 mmHg with a pulse of 113 times per minute, a breathing rate of 20 times per minute, and a body temperature of 36°C. All three are conscious of their composition with a GCS score of 15.

Physical examination showed that the patient was conscious and cooperative. The main hypertension-related finding was a morning headache with a moderate pain intensity (Numeric Rating Scale score of 5/10). Blood pressure was elevated above the normal range, indicating uncontrolled hypertension. No signs of target-organ damage or acute complications, such as neurological deficits, chest pain, or dyspnea, were identified during the assessment.

Examination of the cardiovascular system shows a strong and regular palpable pulse, with capillary filling in less than two seconds. No jugular vein distension or peripheral edema was found. Regular heart beat, no murmur or gallop. In the respiratory system, the pulmonary vesicles sound normal, in the absence of rumping or wheezing.

An abdominal examination showed no pressure pain or enlargement of the organs, with normal bowel noise. The musculoskeletal system is within normal limits, in the absence of deformities or muscle weakness. Examination of the nervous system shows normal physiological reflexes, without neurological focal signs.

The results of laboratory tests showed that the values of blood sugar, total cholesterol, and uric acid were within normal limits, so that hypertension in the three patients was not caused by secondary metabolic disorders. The results of the nutritional status assessment using the Body Mass Index (BMI) showed that Mr. N and Mr. M1 were in the normal category, while Mr. M2 was in the category of mild overweight.

The assessment of the patient's independence function using the Barthel Index showed a score of 20, which means that all patients are independent in carrying out daily activities such as eating, dressing, and self-care. Meanwhile, the results of the activity assessment using the KATZ Index also showed category A (independent).

From these findings, it can be concluded that the three patients experienced primary hypertension with the main clinical manifestations in the form of increased blood pressure and complaints of headache, without the presence of target organ complications such as heart, kidney, or nerve disorders. Relatively good physical condition allows the application of nonpharmacological interventions through a combination of health education and herbal therapy of bay leaf tea to help lower blood pressure

Timeline

The clinical journey of the three patients with hypertension in Sumberkerep Village lasted for three days (3×24 hours) in the implementation of family nursing care. On the first day, the nurse conducted an initial assessment of the three patients, namely Mr. N, Mr. M1, and Mr. M2. The results of the study showed that all patients experienced a significant increase in blood pressure, accompanied by complaints of moderate-

intensity back headache, fatigue, and concern about their health condition. The patient's family is also considered to have not fully understood hypertension, risk factors, and how to control it.

After the review process, the nurse established three main nursing diagnoses, namely acute pain related to increased blood pressure, ineffective family health management related to the family's lack of ability to recognize health problems, and anxiety related to lack of information about the condition of the disease. Based on the diagnosis, a nursing intervention plan was prepared with a combination therapy approach of health education and the administration of bay leaf tea as a non-pharmacological intervention to help lower blood pressure.

On the second day, nursing interventions began to be implemented. Nurses provide health education to patients and families about the definition of hypertension, risk factors, complications, and the importance of setting a low-salt diet, increasing light physical activity, and managing stress. Education is provided using leaflet media and interpersonal communication so that it is easy to understand. In addition, patients were given bay leaf tea (*Syzygium polyanthum*) which was brewed and drunk twice a day—in the morning and evening after meals. During the intervention process, families were actively involved to help prepare and monitor the consumption of bay leaf tea.

On the third day, blood pressure monitoring and evaluation of intervention results were carried out. All three patients showed a good response to the combination of therapies given. Blood pressure decreased significantly: Mr. N. blood pressure decreased from 184/97 mmHg to 165/70 mmHg, Mr. M1 from 175/90 mmHg to 165/86 mmHg, and Mr. M2 from 170/107 mmHg to 160/90 mmHg. In addition, headache complaints are reduced, patients appear calmer, and anxiety levels decrease. Families also show an increased understanding of the importance of blood pressure control and start to get used to a healthy diet and independent blood pressure checks.

Overall, the three-day timeline of family nursing care showed significant improvements in the patient's physiological and psychological condition, as well as an increase in the role of the family in supporting the success of hypertension control. This process emphasizes the importance of family involvement and the application of simple but effective nonpharmacological interventions in community nursing practice.

Diagnostic Assessment

The diagnostic procedure carried out on the three hypertensive patients in Sumberkerep Village aims to enforce a comprehensive nursing diagnosis and ensure that there are no complications of the target organ due to increased blood pressure. The examination was carried out from the initial stage of assessment to the final evaluation of the nursing intervention.

The first step is a vital sign examination, with the main focus on blood pressure measurement using aneroid sphygmomanometers and stethoscopes. The examination is carried out in a sitting position after the patient has rested for at least five minutes to get accurate results. This measurement is the main basis for establishing a medical diagnosis of hypertension as well as determining its severity. Initial results showed blood pressure in the high to very high category in all three patients.

Next, pulse, breathing, and body temperature checks were carried out to assess the patient's hemodynamic condition and general status. Pulse examinations help identify the presence of increased cardiac activity associated with increased blood

pressure, while measurements of breathing frequency and body temperature aim to ensure there are no other systemic disorders such as infections or respiratory disorders that worsen the patient's condition.

In addition to a general physical examination, an in-depth interview (anamnesis) was also conducted regarding the patient's past history of illness, family history, and lifestyle. This interview is important to find out risk factors such as high-salt food consumption, smoking habits, stress, and lack of physical activity. The results of the anamnesis showed that the three patients had a diet high in sodium and did not understand how to control blood pressure properly.

To rule out the possibility of secondary hypertension due to metabolic disorders, a simple laboratory examination is carried out, including blood sugar at the time, total cholesterol, and uric acid levels. The results of laboratory examinations show values that are still within normal limits, so that the hypertension experienced by the patient is categorized as primary or essential hypertension. This laboratory examination is carried out as a form of initial screening to ensure that non-pharmacological interventions are safely applied without the risk of worsening the patient's metabolic condition.

In addition to physiological examinations, nutritional status and independence of daily activities are also assessed. Nutritional status was assessed through the Body Mass Index (BMI), while the level of independence was assessed using the Barthel Index and the KATZ Index. The results of the assessment showed that all patients were still able to perform basic activities independently, which is an important consideration in determining the family nursing care plan.

This series of diagnostic procedures not only serves to establish the medical diagnosis of hypertension, but also to identify relevant nursing problems, such as headaches due to increased blood pressure, anxiety about disease conditions, and the family's inability to carry out health management independently. Thus, the results of this examination became the basis for the preparation of family-based nursing interventions, including the provision of health education and bay leaf herbal therapy.

Therapeutic Intervention

Nursing interventions in the three hypertensive patients in Sumberkerep Village were focused on the application of combination therapy of health education and the administration of bay leaf tea (*Syzygium polyanthum*) as a non-pharmacological approach in lowering blood pressure. This intervention was carried out for three consecutive days (3×24 hours) in the context of family nursing care, by actively involving patients and family members.

Bay leaf tea (*Syzygium polyanthum*) was prepared by boiling one tea bag in approximately two cups of water until the solution turned brownish and aromatic. The decoction was filtered, poured into a glass, and optionally sweetened with one teaspoon of sugar. The tea was administered twice daily, in the morning and at night, for the intervention period.

Interventions other than education, namely in the form of herbal therapy by giving bay leaf tea. Bay leaf tea is prepared by brewing several dried bay leaves in hot water until it becomes a ready-to-consume drink. Patients are recommended to drink bay leaf tea twice a day, in the morning and evening after meals, for three consecutive days. The content of active compounds such as flavonoids, alkaloids, and essential oils in bay leaves

is known to have diuretic and vasodilating effects that can help lower blood pressure naturally.

In the implementation process, nurses monitor the patient's compliance in drinking bay leaf tea, record any daily changes in blood pressure, and evaluate subjective complaints such as headaches, dizziness, and fatigue. In addition, families are given direct assistance to be able to prepare bay leaf tea independently and understand how to serve it correctly.

At the same time, nurses also provide psychological support to reduce the patient's anxiety about his illness. The therapeutic approach is carried out by therapeutic communication, listening to patient complaints, and providing motivation to continue to carry out treatment regularly. Through empathetic and educational communication, patients feel calmer and motivated to carry out the nurse's recommendations.

Overall, the therapeutic interventions provided are holistic, combining physiological, psychological, and educational aspects. Nurses not only play the role of clinical caregivers, but also facilitators for families in raising health awareness and building sustainable healthy living habits. This combination approach has been proven to be effective in lowering blood pressure and improving the family's ability to manage health independently.

Follow-up and Outcomes

After three days of nursing intervention, all three patients showed meaningful clinical progress. Physiologically, there was a decrease in blood pressure in all patients after receiving a combination therapy of health education and the administration of bay leaf tea. In Mr. N, blood pressure decreased from 184/97 mmHg to 165/70 mmHg; in Mr. M1, from 175/90 mmHg to 165/86 mmHg; while in Mr. M2, blood pressure decreased from 170/107 mmHg to 160/90 mmHg.

In addition to changes in blood pressure, the three patients also reported a decrease in subjective complaints such as headache, palpitations, and fatigue. The headache scale that was initially at a moderate level (scale 5) decreased to mild (scale 2–3) at the end of the intervention. Patients appear to be more relaxed, able to sleep better, and feel calmer about their condition.

Psychologically, the patient shows a decrease in anxiety levels after getting a comprehensive explanation of his illness. The education provided by nurses helps patients and families understand that hypertension can be controlled with healthy lifestyle changes, adherence to therapy, and social support from the family.

From the family side, there has been a marked increase in family health management knowledge and skills. Family members began to actively monitor the patient's blood pressure every day, prepare bay leaf tea independently, and help in implementing a low-salt diet. High family involvement strengthens the sustainability of the intervention after the nursing care program ends.

At the final follow-up, the three patients were declared stable with more controlled blood pressure, no longer complained of severe headaches, and were able to do light activities without significant complaints. The family is committed to continuing the habit of drinking bay leaf tea regularly, reducing the consumption of salty foods, and having regular blood pressure checks.

Overall, the follow-up results showed that the combination therapy of health education and the administration of bay leaf tea was effective in lowering blood pressure and improving the quality of life of elderly patients with hypertension. The family-based

approach applied also strengthens family independence in managing health, in line with the principle of family-centered nursing care which is at the core of community nursing practice

RESULTS

This study shows that the combination therapy of education and the administration of bay leaf tea has an effect on reducing blood pressure in the elderly with hypertension in Sumberkerep Village, Mantup District, Lamongan Regency. The intervention was carried out for three days on three elderly male respondents with an age range of 58–65 years. Before the intervention, all respondents experienced high blood pressure accompanied by complaints of headache with a moderate pain scale. After being given an intervention in the form of health education and bay leaf tea consumed twice a day, there was a significant decrease in blood pressure and a reduction in headache complaints.

Table 1. Changes in Blood Pressure and Pain Scale Before and After the Intervention

Respondent Name	Pre-Blood Pressure (mmHg)	Blood Pressure After (mmHg)	Pain Scale Before	Pain Scale After
Mr. N	184/97	165/70	5	2
Mr. M (1)	175/90	165/86	5	2
Mr. M (2)	170/107	160/80	5	2

The measurement results showed a decrease in systolic and diastolic blood pressure in all respondents, accompanied by a decrease in the headache scale from moderate to mild. These changes indicate a positive physiological response to the intervention given. The active compounds in bay leaves such as flavonoids, tannins, and essential oils are known to have diuretic and antioxidant effects that help reduce blood pressure. On the other hand, health education activities strengthen the understanding of patients and families regarding the importance of a low-salt diet, regular physical activity, and stress management to control hypertension.

These findings suggest that the educational role of nurses is critical in helping families understand and manage chronic diseases such as hypertension. Family involvement in the care process has been shown to increase the success of safe, inexpensive, and easy-to-apply nonpharmacological therapies in the home environment. Thus, the application of combination therapy of education and bay leaf tea can be used as an alternative to evidence-based nursing interventions to improve the quality of life of the elderly with hypertension, especially in rural communities.

DISCUSSION

This case study demonstrates that the combination of health education using leaflets and bay leaf tea (*Syzygium polyanthum*) administration was associated with improvements in blood pressure control and reduction of headache complaints among hypertensive elderly patients. However, these findings should be interpreted as short-term outcomes of a non-pharmacological nursing intervention and not as definitive clinical efficacy. The observed

The improvement in patient conditions can be explained through a synergistic mechanism between behavioral and physiological factors. Health education is a key component of hypertension management that enhances patients' and families' knowledge, attitudes, and self-management skills. In this case, the use of leaflet-based

education supported repeated access to information, which may contribute to better dietary regulation, reduced salt intake, and improved adherence to hypertension management. This is consistent with previous studies indicating that structured health education significantly improves self-care behavior and blood pressure control in community settings [9].

From a physiological perspective, bay leaf tea (*Syzygium polyanthum*) may exert antihypertensive effects due to its bioactive compounds, including flavonoids, tannins, and polyphenols. These compounds are reported to have antioxidant, vasodilatory, and mild diuretic properties that may contribute to reduced peripheral vascular resistance and improved fluid balance [10]. This supports previous findings that herbal-based interventions can be used as complementary therapy in mild to moderate hypertension. Nevertheless, the clinical effect of herbal interventions remains variable and may depend on dosage, preparation method, and individual patient response [11].

When compared with other complementary interventions such as relaxation therapy, yoga, or breathing exercises, bay leaf tea offers practical advantages in community-based nursing care, particularly in low-resource settings. It is inexpensive, culturally familiar, and easy to prepare, which increases acceptability among elderly patients and families. However, behavioral interventions such as physical activity programs may provide broader cardiovascular benefits and should be considered as part of a comprehensive hypertension management plan.

The findings also highlight the importance of family involvement in chronic disease management. Family-centered nursing care plays a critical role in supporting lifestyle modification, ensuring dietary compliance, and encouraging treatment adherence. In this case, increased family awareness contributed to improved home-based hypertension management practices. This aligns with the concept that sustainable blood pressure control requires continuous behavioral support rather than short-term interventions alone [12].

Despite these positive outcomes, several limitations should be acknowledged. The intervention was conducted over a short duration of three days, without a control group, and involved a limited number of cases. Therefore, causality cannot be firmly established [13]. In addition, blood pressure changes may be influenced by external factors such as medication adherence, physical activity, and daily physiological variation [14].

Overall, this case supports the potential role of integrating health education and culturally accepted herbal therapy in community-based hypertension management. However, further studies with larger samples, longer follow-up periods, and controlled designs are needed to validate these findings and strengthen the evidence base for bay leaf tea as a complementary nursing intervention.

These findings are consistent with Rahmalia et al. (2025). It is stated that bay leaf tea contains compounds that help regulate blood pressure and facilitate blood circulation. Increased potassium levels in the body due to the consumption of bay leaves can make it easier for oxygen to reach the brain and support fluid balance [16]. In addition, providing education through leaflets increases patients' understanding of healthy lifestyles that can be done at home [17].

An important lesson from this case is that a combination of health education and simple herbal therapy can be an effective strategy in managing hypertension in the community. An approach that is in line with the local culture and utilizes natural ingredients that are easily available will be more accepted by patients and families. This

case shows that small, consistent changes, such as drinking bay leaf tea and understanding a healthy diet, can have a big impact on blood pressure control.

This case shows that nursing interventions that combine health education and complementary therapy of bay leaf tea are effective in lowering blood pressure and improving family understanding of hypertension.

These findings are consistent with Sons (2021) that the provision of health education is an important pillar in the management of hypertension and that bay leaf tea has pharmacological benefits as a blood pressure lowerer [19]. These findings strengthen the role of nurses in implementing education-based nonpharmacological interventions and natural herbs [20].

This case made a real contribution to the development of community nursing science, particularly in the application of evidence-based complementary therapies and local culture. This approach suggests that nurses can blend an educational role with simple interventions that are effective to improve the quality of life of hypertensive patients. Thus, this case enriches nursing practice through the implementation of interventions that are holistic, affordable, and in accordance with the needs of the community.

CONCLUSION

Case studies show that the combination of health education using leaflets and bay leaf tea (*Syzygium polyanthum*) administration was associated with improvements in blood pressure control and reduction of headache complaints among elderly patients with hypertension in Sumberkerep Village, Mantup District, Lamongan Regency. This intervention also improved family knowledge and understanding regarding the recognition of hypertension symptoms, complications, and home-based disease management. Through structured education, families became more actively involved in dietary management, blood pressure monitoring, and providing support for affected family members.

The relevance to nursing practice is reflected in the role of nurses as educators and facilitators in promoting healthy lifestyle behaviors and guiding the safe use of complementary therapies. This approach is consistent with community-based nursing care that emphasizes family empowerment and prevention of chronic disease complications. The use of locally available herbal interventions, such as bay leaves, provides a practical non-pharmacological option that is feasible and acceptable in rural community settings.

For future nursing practice, the integration of structured health education and culturally appropriate complementary therapies is recommended as part of a holistic approach to hypertension management. Further studies with longer intervention periods, larger sample sizes, and more rigorous study designs are needed to strengthen the evidence regarding the effectiveness of bay leaf tea in blood pressure control and to evaluate its impact on patients' quality of life. A collaborative approach involving nurses, families, and the community is essential to support sustainable hypertension management.

Acknowledgments

The researcher expressed his gratitude to the University of Muhammadiyah Lamongan for the support and guidance during the implementation of this research. Gratitude was also conveyed to the Sumberkerep Village, Mantup District, Lamongan Regency, as well as all respondents and families who have participated cooperatively in this research activity.

Conflict of Interest

The author states that there is no conflict of interest

Funding

This research does not receive specific grants from funding institutions in the public, commercial, or non-profit sectors

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