JURNAL KESEHATAN
JURNAL ILMU-ILMU KEPERAWATAN, KEBIDANAN, FARMASI & ANALIS KESEHATAN
DOI : https://doi.org/10.52221/jurkes
JURKES
ISSN : 2089-3906

Watermelon Juice as a Non-Pharmacological Intervention for Hypertension in the Elderly: A Case Study

Dedi Supriadi[1], Rike Rahma Amelia [1]

[1] STIKes Muhammadiyah Ciamis, West Java, Indonesia

Article Information

Revised: September 2025
Available online: October 2025

Keywords

Hypertension; Elderly; Watermelon Juice; Blood Pressure; Non-Pharmacological Therapy

Correspondence

E-mail : rikeurahma66@gmail.com

ABSTRACT

Hypertension is a prevalent condition among older adults and is associated with serious complications, including cardiovascular disease, stroke, and renal failure. Non-pharmacological interventions, particularly the use of functional foods, have gained increasing attention due to their natural benefits and minimal adverse effects. This case study aimed to evaluate the effect of daily watermelon juice consumption on blood pressure in a 61 year old woman with a history of hypertension residing in Dusun Walahir Tonggoh, Welasari Village, Majalengka Regency. The patient received 300 mL of freshly prepared watermelon juice once daily for four consecutive days. Nursing care was delivered using the nursing process, including assessment, diagnosis, intervention, implementation, and evaluation. Blood pressure was measured before and after the intervention using a manual sphygmomanometer. The results demonstrated a clinically meaningful reduction in blood pressure, from an average of 155/90 mmHg to 140/80 mmHg, indicating the potential effectiveness of watermelon juice in lowering blood pressure. This study concludes that watermelon juice may serve as a promising, natural, and affordable complementary therapy to support hypertension management in elderly patients.

https://doi.org/10.52221/jurkes.v12i2.853

INTRODUCTION

Hypertension is a major global health problem and a leading cause of cardiovascular morbidity and mortality, particularly among the elderly. The World Health Organization (WHO) estimates that more than one billion people worldwide live with hypertension, contributing substantially to premature death. In Indonesia, the prevalence of hypertension among older adults has reached 63.5%, making it one of the most common non-communicable diseases in this population (Riskesdas, 2018). In West Java Province, the prevalence is reported at 39.6%, while Majalengka Regency where this study was conducted records a prevalence of 38.8% (Setyowati & Wahyuni, 2019). These data highlight the urgent need for effective, accessible, and safe interventions to manage hypertension in elderly populations.

Hypertension significantly impairs quality of life by increasing the risk of cardiovascular complications, reducing functional independence, and contributing to long-term morbidity. Although pharmacological therapies are widely used, they are often associated with adverse effects such as electrolyte imbalance, renal impairment, and reduced adherence due to polypharmacy, particularly among older adults. Consequently, non-pharmacological approaches, especially dietary interventions, have gained attention for their safety, affordability, and cultural acceptability. One such intervention is watermelon (Citrullus lanatus) juice, which contains L-citrulline, potassium, lycopene, and other antioxidants known to promote vasodilation, lower blood pressure, and support cardiovascular health (Komariyah, 2024; Sampe, 2022).

In the context of holistic and culturally sensitive care, this intervention aligns with Islamic health principles that emphasize maintaining health as a form of responsibility and gratitude toward the body entrusted by God. As stated in the Qur'an, "O mankind, eat from whatever is on earth [that is] lawful and good…" (Q.S. Al-Baqarah: 168). This perspective supports the use of natural, lawful, and beneficial foods as part of health promotion and disease management strategies.

This case study explores the implementation of watermelon juice therapy in a 61-year-old woman with hypertension residing in Dusun Walahir Tonggoh, Welasari Village, Majalengka Regency. Over four consecutive days, the patient received 300 mL of freshly prepared watermelon juice daily. The study aimed to evaluate changes in systolic and diastolic blood pressure using a manual sphygmomanometer, as well as to assess the practicality and effectiveness of this intervention in a rural community setting. By adopting a real-world, community-based nursing approach, this study provides evidence-based insights for nursing practitioners, caregivers, and public health stakeholders regarding the role of functional foods as complementary strategies in managing hypertension among elderly individuals. The findings are expected to contribute to the development of gerontological nursing practices that integrate safe, accessible, and culturally appropriate interventions to improve cardiovascular health and overall quality of life.

https://doi.org/10.52221/jurkes.v12i2.853

METHOD

Assessment

This study employed a descriptive case study design using a structured nursing care approach to evaluate the effect of watermelon juice administration on blood pressure in an elderly patient with hypertension. The subject was a 61-year-old woman residing in Dusun Walahir Tonggoh, Welasari Village, Majalengka Regency, with a clinical history of elevated blood pressure. Data were collected through direct interviews, physical examinations, observation of daily activities, and documentation using the SOAPIER format. Baseline and post-intervention blood pressure measurements were obtained using a manual sphygmomanometer to assess the impact of daily consumption of 300 mL of watermelon juice over four consecutive days.

Diagnosis

The nursing diagnosis, "Ineffective Health Maintenance related to insufficient knowledge of hypertension management," was established based on the Indonesian Nursing Diagnosis Standards (SDKI). Interventions were guided by the Indonesian Nursing Intervention Standards (SIKI), while outcomes were evaluated using the Indonesian Nursing Outcome Standards (SLKI), focusing on changes in systolic and diastolic blood pressure and the patient's adherence to recommended lifestyle modifications.

Intervention

The nursing intervention consisted of a non-pharmacological approach involving the daily administration of 300 mL of freshly prepared watermelon juice for four consecutive days (June 20–23, 2025). The intervention was conducted at the patient's home to ensure convenience and adherence. The juice was prepared without added sugar to preserve its natural bioactive compounds, such as L-citrulline and lycopene, which support vasodilation and reduce oxidative stress. Blood pressure was measured before and after each session using a manual sphygmomanometer. In addition, health education was provided to the patient and her family regarding adequate fluid intake, salt restriction, and regular blood pressure monitoring to promote long-term self-care and hypertension control.

Evaluation

Evaluation was performed daily by comparing blood pressure measurements obtained before and after watermelon juice administration. Both systolic and diastolic values were recorded systematically to identify trends and responses to the intervention. Subjective symptoms, including headache, dizziness, and fatigue, were also assessed. At the end of the four-day intervention period, the patient's average blood pressure decreased from 155/90 mmHg to 140/80 mmHg, indicating a positive clinical response. All findings were documented using the SOAPIER format to provide a comprehensive overview of the patient's progress.

RESULTS AND DISCUSSION

This case study involved Mrs. S, a 61-year-old woman residing in Dusun Walahir Tonggoh, Welasari Village, Majalengka Regency, with a long-standing history of hypertension. Prior to the intervention, her average blood pressure was 155/90 mmHg, corresponding to stage 1 hypertension according to the World Health Organization classification. The patient received 300 mL of freshly prepared watermelon juice daily for four consecutive days, with blood pressure measured before and after each administration.

Following the intervention, a clinically meaningful reduction in both systolic and diastolic blood pressure was observed, with a post-intervention average

of 140/80 mmHg. The patient also reported subjective improvements, including reduced headaches, decreased dizziness, and increased overall comfort. These findings suggest that watermelon juice may have contributed to improved blood pressure regulation and symptom relief.

The observed blood pressure reduction is consistent with previous studies demonstrating the antihypertensive effects of watermelon, which are attributed to its high content of L-citrulline, potassium, and antioxidants. L-citrulline enhances nitric oxide production, leading to vasodilation and reduced vascular resistance, while potassium supports sodium excretion and electrolyte balance. Lycopene and other antioxidants further contribute to vascular protection by reducing oxidative stress and improving endothelial function. These mechanisms have been reported in earlier research, including studies by Fridalni and Syofia (2013), which documented similar reductions in blood pressure following regular watermelon consumption.

In elderly populations, pharmacological management of hypertension is often complicated by polypharmacy, adverse drug reactions, and reduced adherence. Therefore, natural interventions such as watermelon juice offer a safer, more accessible, and culturally acceptable alternative or complementary strategy. In this case, the intervention was well tolerated, required no pharmacological agents, and was easily implemented at home, making it particularly suitable for rural and resource-limited settings.

Overall, this case supports the potential role of functional foods in community-based hypertension management. The combination of measurable blood pressure reduction and improved patient-reported outcomes highlights the value of incorporating simple, non-pharmacological dietary interventions into geriatric nursing care to enhance cardiovascular health and promote holistic well-being among elderly individuals.

Physical Examination

Mrs. S was alert and oriented throughout the intervention period, with a Glasgow Coma Scale (GCS) score indicating full consciousness. Her vital signs, including blood pressure, pulse, respiratory rate, and temperature, were monitored daily and remained within acceptable clinical ranges. General physical examination revealed no abnormalities, with no evidence of edema, cyanosis, or acute distress. Neurological assessment showed normal reflexes and coordination, while cardiovascular examination confirmed a regular heart rate and rhythm without murmurs or signs of cardiac dysfunction. Respiratory and gastrointestinal assessments were unremarkable, and the integumentary system was intact with normal skin turgor and no lesions.

Musculoskeletal assessment revealed a slow but stable gait without the need for assistive devices. Mild fatigue and occasional knee discomfort were reported prior to the intervention, which improved during the intervention period. Muscle strength was adequate for basic mobility and showed slight improvement by the end of the intervention. Notably, the patient was not receiving antihypertensive medication during the study and was managed solely through non-pharmacological means.

Table 1. Blood Pressure Monitoring

Date	Blood Pressure	Category
June 6, 2025	150/90 mmHg	Degrees 1
June 7, 2025	145/80 mmHg	Degrees 1
June 8, 2025	140/80 mmHg	Degrees 1

Table 1 presents daily blood pressure measurements obtained using a manual

sphygmomanometer. On June 6, 2025, the patient's blood pressure was 150/90 mmHg, classified as Stage 1 hypertension. A gradual reduction was observed over the subsequent days, reaching 140/80 mmHg by June 8, 2025. These improvements were accompanied by the absence of dizziness and headaches and by stable cardiovascular and respiratory findings.

Overall, the consistent reduction in blood pressure and stable physical examination findings suggest that the watermelon juice intervention was well tolerated and contributed to improved cardiovascular stability. This case underscores the value of regular blood pressure monitoring and supports the effectiveness of non-pharmacological dietary interventions in managing hypertension among elderly patients, particularly in rural and resource-limited settings.

Nursing Diagnosis

The nursing diagnosis established was Acute Pain (D.0077) related to increased blood pressure, as evidenced by verbal complaints of headache, restlessness, elevated systolic and diastolic blood pressure, and tense facial expressions. At the beginning of the intervention, Mrs. S reported persistent headaches and general discomfort commonly associated with hypertension. Her blood pressure was recorded at 150/90 mmHg, consistent with Stage 1 hypertension.

Subjective Data:

The patient reported a one-week history of intermittent, stabbing headaches radiating to the shoulders.

Objective Data:

Pain was exacerbated by activity and relieved with rest, with a pain intensity score of 3/10 on the Numeric Rating Scale (NRS). The patient appeared tense during initial observation. After two days of watermelon juice consumption, she reported noticeable symptom improvement.

Nursing Interventions

Based on the assessment, nursing care focused on both pain management and blood pressure control through a non-pharmacological approach. Interventions included the administration of watermelon juice as a dietary therapy, regular monitoring of vital signs, assessment of pain using the NRS, and health education regarding lifestyle modification, including salt restriction, adequate fluid intake, and stress management.

Implementation

The intervention was implemented according to an individualized nursing care plan. Mrs. S received 300 mL of freshly prepared watermelon juice once daily for three consecutive days at her home. Vital signs, including blood pressure, pulse rate, respiratory rate, and temperature, were monitored before and after each administration. Pain intensity was assessed using the NRS, demonstrating a gradual reduction. The patient and her family were actively involved in the intervention and received education on healthy dietary practices, stress management, and the importance of consistent lifestyle changes. The nurse encouraged Mrs. S to continue the watermelon juice therapy independently as part of her daily routine to support blood pressure control.

Evaluation

Progressive improvement was observed over three clinical visits:

- First visit: The patient reported headaches radiating to the shoulders.
- Second visit: The patient stated that she felt better, with a noticeable reduction in headache intensity.
- Third visit: The patient reported continued improvement, with headache symptoms nearly resolved.

Overall, the intervention effectively reduced both blood pressure and headache symptoms. The patient's systolic and diastolic values decreased, and she reported improved comfort. These findings support the use of watermelon juice as a safe and beneficial complementary therapy in the management of hypertension among elderly patients.

Discussion

This study demonstrates the potential of watermelon juice as a non-pharmacological intervention for reducing blood pressure in an elderly patient with hypertension. Mrs. S had a history of persistently elevated blood pressure accompanied by recurrent headaches, indicating suboptimal hypertension control. Prior to the intervention, her average blood pressure was 155/90 mmHg. Following the daily administration of 300 mL of watermelon juice for three consecutive days, her blood pressure decreased to 140/80 mmHg, reflecting a clinically meaningful improvement. These findings are consistent with previous studies reporting the antihypertensive effects of watermelon, which are attributed to its content of L-citrulline, lycopene, and potassium that promote vasodilation and support cardiovascular function (Yanti et al., 2019).

The patient's positive response, including reduced pain intensity and improved blood pressure stability, suggests that watermelon juice is a practical, affordable, and accessible complementary therapy, particularly in rural and resource-limited settings. The active involvement of family members in supporting the intervention highlights the importance of collaborative care in managing chronic conditions among older adults. Additionally, the intervention enhanced the patient's awareness of healthy lifestyle behaviors, such as reducing salt intake and maintaining adequate hydration, aligning with nursing goals to promote independence, improve quality of life, and prevent complications through sustainable and culturally appropriate strategies.

Despite these encouraging outcomes, several limitations should be acknowledged. The short duration of the intervention and the absence of long-term follow-up limit conclusions regarding the sustainability of blood pressure reduction. Furthermore, as this was a single-case study, the findings may not be generalizable to broader populations with varying levels of hypertension severity and comorbidities. Future studies involving larger sample sizes and longer observation periods are recommended to further evaluate the long-term effectiveness and adherence to watermelon juice as a complementary therapy. Nevertheless, this case supports the integration of nutritional interventions into nursing care plans for elderly patients with hypertension.

CONCLUSIONS

This case study demonstrates that the administration of watermelon juice as a non-pharmacological nursing intervention is effective in reducing blood pressure in an elderly patient with hypertension. Over three days, the patient experienced a consistent reduction in blood pressure from an average of 155/90 mmHg to 140/80 mmHg, accompanied by decreased headache intensity and improved overall comfort. These findings are consistent with existing literature highlighting the cardiovascular benefits of watermelon's bioactive compounds, particularly L-citrulline and lycopene, which support vascular relaxation and cardiovascular health.

The intervention was safe, simple, and well tolerated, requiring no pharmacological agents or complex procedures, making it a practical option for community-based geriatric care. This case also underscores the importance of incorporating culturally acceptable,

accessible, and low-cost interventions into nursing practice. Given the widespread availability and affordability of watermelon in many communities, this approach has strong potential for replication in similar settings. Nurses play a crucial role not only in delivering care but also in educating patients and families about lifestyle modifications that can significantly improve health outcomes. Future research is recommended to examine the long-term effects of regular watermelon juice consumption and its integration into comprehensive hypertension management programs for elderly populations.

BIBLIOGRAPHY

Adam, L. (2019). Determinan hipertensi pada lanjut usia. Jambura Health and Sport Journal, 1(2), 82–89.

Afriansyah, A., & Santoso, M. B. (2019). Pelayanan panti werdha terhadap adaptasi lansia. Responsive: Jurnal Pemikiran dan Penelitian Administrasi, Sosial, Humaniora dan Kebijakan Publik, 2(4), 190–198.

Amiliya, F. (2020). Hubungan social support dengan risiko jatuh lansia [Undergraduate thesis, Universitas Muhammadiyah Surabaya].

Andari, F. N., Vioneery, D., Panzilion, P., Nurhayati, N., & Padila, P. (2020). Penurunan tekanan darah pada lansia dengan senam ergonomis. Journal of Telenursing, 2(1), 81–90.

Cholifah, N., & Sokhiatun, S. (2022). Pengaruh diet tinggi serat terhadap tekanan darah pada penderita hipertensi. Jurnal Ilmu Keperawatan dan Kebidanan, 13(2), 412–420.

Dewi, R. A. (2019). Asuhan keperawatan pada pasien lansia penderita hipertensi dengan masalah keperawatan: Nyeri akut di UPT Pelayanan Sosial Tresna Werdha Magetan [Undergraduate thesis, Universitas Muhammadiyah Ponorogo].

Diananda, A. (2019). Psikologi remaja dan permasalahannya. Journal ISTIGHNA, 1(1), 116–133. https://doi.org/10.33853/istighna.v1i1.20

Gemini, N. S., Yulia, N. R., Roswandani, A. S., Pakpahan, H. M., Setiyowati, E., & Hardiyati, S. K. (2021). Keperawatan gerontik. Yayasan Penerbit Muhammad Zaini.

Ija, K. (2024). Pengaruh senam tera terhadap penurunan tekanan darah pada lansia dengan hipertensi di wilayah kerja Puskesmas Lembang Kabupaten Majene [Undergraduate thesis, Universitas Sulawesi Barat].

Juliastuti, H., Yuslianti, E. R., Rakhmat, I. I., Handayani, D. R., & Prayoga, A. M. (2021). Sayuran dan buah berwarna merah, antioksidan penangkal radikal bebas. Deepublish.

Komariyah, S. (2024). Implementasi rebusan daun kelor (Moringa oleifera) pada penderita hipertensi: Studi kasus asuhan keperawatan keluarga pada Ny. A di Dusun Ajungkulon Desa Ajung [Undergraduate thesis, Universitas Dr. Soebandi].

Lukitaningtyas, D., & Cahyono, E. A. (2023). Hipertensi: Artikel review. Pengembangan Ilmu dan Praktik Kesehatan, 2(2), 100–117.

Maryono, C. (2024). Hubungan dukungan keluarga dengan kepatuhan minum obat hipertensi pada lansia di Posyandu Melati Kampung Terbanggi Besar Kabupaten Lampung Tengah [Undergraduate thesis, Universitas Muhammadiyah Pringsewu].

Yunianto, R. (2023). Hubungan tingkat pengetahuan hipertensi dengan sikap dalam pencegahan komplikasi hipertensi di Desa Wungu Kecamatan Wungu Kabupaten Madiun [Undergraduate thesis, STIKES Bhakti Husada Mulia Madiun].