

ARTICLE INFORMATION

Received: February, 26, 2024

Revised: July, 29, 2024

Available online: July, 31, 2024

at : <https://ejournal.malahayati.ac.id/index.php/minh>

Effect of complementary therapy to blood pressure reduction in patients with hypertension: A literature review

Naura Farkhia Putri*, Fahrur Nur Rosyid

Universitas Muhammadiyah Surakarta

Corresponding author: *E-mail: j210190029@student.ums.ac.id

Abstract

Background: Hypertension has a high mortality rate and its prevalence increases with age. One intervention to reduce high blood pressure is with complementary therapy as non-pharmacological treatment.

Purpose: To find out whether complementary therapy is effective in lowering blood pressure in people with hypertension. Based on electronic databases from national and international publications such as Google Scholar and PubMed.

Method: A literature review using an electronic database that uses national journals and international journals from Google Scholar and PubMed, with the keywords "hypertension, blood pressure and complementary therapy".

Results: After conducting a preliminary literature search on Google Scholar and PubMed, 1243 articles were found with the same title; 1231 of them were discarded because they were less relevant to the issue of complementary therapy to reduce blood pressure in hypertensive patients. Requirements were met by 12 full-text articles.

Conclusion: patients with hypertension can reduce their blood pressure effectively by using complementary therapies.

Suggestion: This approach can be used as an intervention or alternative to non-pharmacological blood pressure measures because it can drastically reduce blood pressure after therapy.

Keywords: Blood Pressure; Complementary Therapy; Hypertension.

INTRODUCTION

One of the reasons for the high death rate in Indonesia is hypertension (Soesanto & Marzeli, 2020). Hypertension is defined as when a person's blood pressure exceeds normal limits. One of the reasons is that higher levels of morbidity and mortality are thought to be caused by this disease (Sumartini et al., 2019). The risk factor for death from ischemic heart disease and stroke is an increase in systolic blood pressure by 20 mmHg and diastolic by 10 mmHg (Mukti, 2020).

According to the World Health Organization (WHO), in 2014 as many as 22% of people aged 18 years and over suffered from hypertension. Apart from that, this disease is also the cause of 51% of deaths

from stroke and 40% from heart disease. Another non-communicable disease that many Indonesians suffer from is hypertension (57.6%). Indonesian Basic Health Research 2018, non-communicable diseases (NCDs) including hypertension (6.7%) are the most common cause of death and shows that the prevalence of high blood pressure sufferers nationally is 34.11%, with the prevalence of women (36.85%) % greater than men (31.34%). The incidence is slightly higher in cities (34.43%) as opposed to rural areas (33.72%). Increasing age will trigger a higher prevalence over time (Ministry of Health of the Republic of Indonesia, 2019).

The annual increase in hypertension is caused by

Effect of complementary therapy to blood pressure reduction in patients with hypertension: A literature review

a number of factors, including population growth, decreased physical activity, and poor lifestyle choices, such as consuming more sugar, fat, and salt and consuming less high-fiber foods. In addition, there is alcohol and tobacco use (Pamelia, 2018). Based on the cause, hypertension is divided into two, namely essential hypertension and secondary hypertension. Nearly 90% of hypertensive sufferers are believed to suffer from essential hypertension, which is not the case the cause is identified, the remaining 10% suffer from secondary hypertension, which has other diseases such as renal artery disease, hyperthyroidism, hyperaldosteronism, etc (Putra, 2018).

Risk factors for hypertension that can be changed include age, gender, heredity, while risk factors that can be changed include bad eating habits, smoking, eating lots of salty foods, not moving much, drinking alcohol and being obese (Asri et al., 2022). In other words, genetic and hereditary factors also influence the occurrence of hypertension. People who have a family history of this condition are twice as likely to develop this disease as people who have no history of the disease (Sari & Majid, 2019).

There are two types of management for hypertension, namely pharmacological management and non-pharmacological management. Patients with hypertension will depend on drugs such as diuretics, alpha beta and *alpha-beta adrenergic blocker*, ACE inhibitors and *calcium channel blocker* accompanied by regular check-ups at health facilities which adds time and costs (Mufarokhah, 2020). Long-term use of hypertension medication can also cause side effects, which causes some sufferers to choose to withdraw from medication or not comply with treatment and choose other alternatives. Giving starfruit herbal medicine is a non-pharmacological method that can be used as an alternative for treating hypertension (Fatichasari, 2019). Non-pharmacological

management is by implementing a clean and healthy lifestyle, exercising regularly, and carrying out complementary therapies.

Extra efforts made outside of medical procedures known as complementary therapies are thought to be able to lower blood pressure. The percentage of additional treatments is growing very rapidly. Complementary therapies, including music therapy, herbal therapy, laughter therapy, foot massage, and the use of essential oils, have been used widely throughout the world to lower blood pressure.

RESEARCH METHOD

This type of research is *literature review* using an electronic database that uses national journals and international journals from Google Scholar and PubMed with the keywords "hypertension, blood pressure and complementary therapy". The inclusion criteria used by the author are articles or articles published in the last 4 years, namely from 2019 to 2023, complementary therapies, s in accordance with the research purpose, full text, and having titles and contents that are appropriate to nursing. Articles disbursement begins on June 23, 2023 using keywords that have been previously determined by researchers and meet the inclusion requirements. Researchers produce articles and choose which ones to include in the discussion section based on research findings.

RESEARCH RESULTS

The initial literature search used obtained 1243 articles that matched the title (Google Scholar, and PubMed) then 1231 articles were excluded that did not answer the research, were in the form of literature reviews, and articles that were not in sync with the research topic. Then the researchers used 12 full text articles that met the criteria as listed below.

Naura Farkhia Putri*, Fahrur Nur Rosyid

Universitas Muhammadiyah Surakarta

Corresponding author: *E-mail: j210190029@student.ums.ac.id

DOI: <https://doi.org/10.33024/minh.v7i5.214>

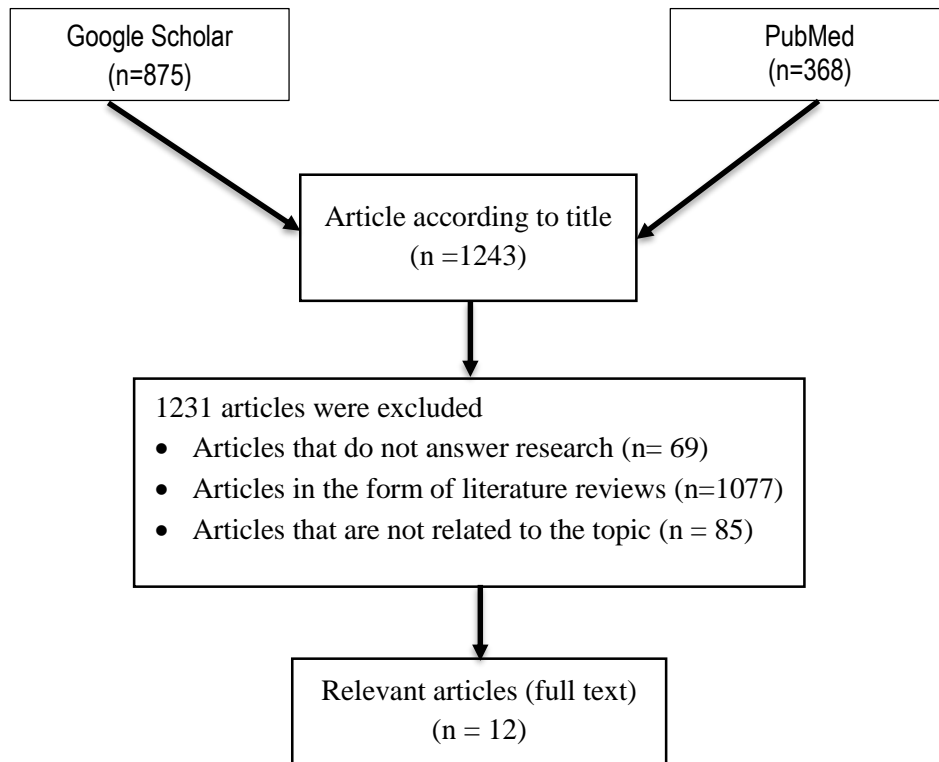


Figure 1. PRISMA Flow Diagram

Naura Farkhia Putri*, Fahrur Nur Rosyid

Universitas Muhammadiyah Surakarta

Corresponding author: *E-mail: j210190029@student.ums.ac.id

DOI: <https://doi.org/10.33024/minh.v7i5.214>

Table. Summary of The Articles' Review

Author, Year, Country	Title	Method	Sample	Intervention	Results
(Cholifah, Setyowati, & Karyati, 2019). (Indonesia)	Influence providing therapy Music Sounds of Nature To Pressure Drop Blood in Patients Hypertension	Quasy Experiment	N = 24 (n=12 natural sound music therapy, n=12 therapeutic communication)	Intervention: providing natural sound music therapy Frequency: Intervention given for 7 days	There is an effect of natural sound music therapy on reducing blood pressure in hypertensive patients
(Patria, 2019). (Indonesia)	Influence Massage Feet To Pressure Drop Blood In Groups Mature Which Having hypertension	Quasy Experiment, just intervention in one group without comparison	N = 30 is given treatment therapy foot massage	Intervention: provide foot massage therapy	The blood pressure lowering effect of foot massage was found in a group of hypertensive adults.
(Sari, & Purwono, 2022). (Indonesia)	Influence Coconut water To Pressure Drop Blood in Patients Hypertension	Quasy Experiment, just intervene in one group without comparison	N = 24 is given coconut water	Intervention: give young coconut water	There is an effect of young coconut water on reducing blood pressure in hypertensive patients
(Aminuddin, Sudarman, & Syakib, 2020) (Indonesia)	Pressure Drop Blood Sufferer Hypertension After Given Therapy Acupressure	Pre-experiments with one group pre and post-test design	N = 7 is given therapy Acupressure	Intervention: give therapy acupressure Duration: 10 minutes Frequency: intervention Given for 3 times a day on respondents for 2 days in a row	There is effectiveness in implementing therapy acupressure to reduce blood pressure in hypertensive patients

Naura Farkhia Putri*, Fahrur Nur Rosyid

Universitas Muhammadiyah Surakarta

Corresponding author: *E-mail: j210190029@student.ums.ac.id

DOI: <https://doi.org/10.33024/minh.v7i5.214>

Effect of complementary therapy to blood pressure reduction in patients with hypertension: A literature review

(Barus, Ginting, & Turnip, 2019). (Indonesia)	Cucumber Juice Therapy Reducing Blood Pressure in Sufferers Hypertension	Quasy Experiment, just intervene in one group without comparison	N = 23 is given cucumber juice therapy	Intervention: give cucumber juice	There is an effect of cucumber juice therapy on lowering blood pressure in hypertension sufferers
(Sidik, 2020). (Indonesia)	Influence Therapy Classical Music Against Pressure Drop Blood Sufferer Hypertension in the Elderly	Quasy Experiment, just intervene in one group without comparison	N = 35 is given classical music therapy	Intervention: provide classical music therapy	There is an effective influence of classical music therapy in reducing blood pressure and hypertension in the elderly.
(Anjana, Archana, & Mukkadan, 2022). (India)	Effect or Om Chanting And Yoga Nidra On Blood Pressure And Lipid Profile In Hypertension	RCT (Randomize d Controlled Trial)	N = 80 (n=40 therapies Intervention combination Singing Om chanting and Yoga Nidra, n=40 conventional al therapy)	Intervention: providing therapy intervention combination singing OM and Yoga Nidra Frequency: intervention given five days a week During period of 2 months	There is an influence of OM music and Yoga Nidra on reducing blood pressure in hypertension sufferers
Vilaval, Sasinan, Mayuree, Chananun, & Somchai, 2019). (Thailand)	Effect of Acupunctur e On Blood Pressure Control In Hypertensive Patients	RCT (Randomize d Controlled Trial)	N = 90 (n=45 therapies Acupuncture and treatment, n=45 treatments only)	Intervention: providing therapy acupuncture Duration: 30 minutes Frequency: intervention given once a week during eight week	There is an effect of acupuncture therapy to reduce blood pressure in hypertensive patients

Naura Farkhia Putri*, Fahrur Nur Rosyid

Universitas Muhammadiyah Surakarta

Corresponding author: *E-mail: j210190029@student.ums.ac.id

DOI: <https://doi.org/10.33024/minh.v7i5.214>

Effect of complementary therapy to blood pressure reduction in patients with hypertension: A literature review

(Li, Shen, Gao, & Liu, 2019). (China)	Effect of Acupuncture On Blood Pressure Variability In Elderly Patients With Cerebral Infarction Complicated With Essential Hypertension	RCT (Randomized Controlled Trial)	N = 76 (n=38 Chinese Acupuncture Kaiqiao and nifedipin, n=38 akupunktur Huoxue Sanfeng dan Tiaohe Ganpi)	Intervention: providing therapy acupuncture Duration: 30 minutes Frequency: intervention given once a day, 5 times a week for 8 weeks	There is an effect of Huoxue Sanfeng and Tiaohe Ganpi acupuncture therapy to reduce blood pressure in elderly patients with cerebral infarction complicated by essential hypertension.
(Kotruchin et al., 2021 (Thailand)	The Effects of Foot Reflexology on Blood Pressure And Heart Rate	RCT (Randomized Controlled Trial)	N = 94 (n=47) foot reflexology massage therapy, n=47 conventional treatment)	Intervention: provide foot reflexology massage therapy Duration: 5 minutes	There is an effect of foot reflexology therapy to reduce blood pressure in hypertensive patients
(Mitsungnern et al., 2021). (Thailand)	The Effect of Pursed Lip Breathing Combined With Number Counting On Blood Pressure And Heart Rate In Hypertensive and Emergency Patients	RCT (Randomized Controlled Trial)	N = 112 (n=57 respiratory therapy cone ut and number calculation, n=55 conventional treatment)	Intervention: providing therapy breathing taper and number calculation Duration: 15 minutes Frequency: 15 minutes every hour for 3 hours	There is an influence of breathing exercises pursing the lips combined with counting numbers is effective in lowering blood pressure
(Herrod, Lund, & Phillips, 2021). (United Kingdom)	Time Efficient Physical Activity Interventions To Reduce Blood Pressure In Older Adults	RCT (Randomized Controlled Trial)	N = 48 (n=24) interventions Activity time-saving physical, n=24 non intervention)	Intervention: provide intervention Time-saving physical activity Frequency: 6 weeks	There was a decrease in resting systolic blood pressure after the intervention

Naura Farkhia Putri*, Fahrur Nur Rosyid

Universitas Muhammadiyah Surakarta

Corresponding author: *E-mail: j210190029@student.ums.ac.id

DOI: <https://doi.org/10.33024/minh.v7i5.214>

DISCUSSION

Complications due to untreated hypertension can be numerous. Vision problems, nervous system disorders, heart problems, kidney function problems, and cerebral (brain) disease are some of the complications that often arise in severe hypertension. This brain disease can cause paralysis, decreased consciousness, bleeding in the blood vessels of the brain, seizures, and even coma. Chronic elevation of blood pressure is the main cause of end organ damage to describe complications of hypertension. Therefore, chronically elevated blood pressure is very dangerous and can even be fatal. Nonetheless, there are a number of non-pharmacological and pharmacological treatment options for hypertension.

Research in Pelang Mayong Village, Jepara, stated that the application of natural sound music therapy was effective in reducing blood pressure in hypertensive patients after a 7-day intervention (Cholifah et al., 2019). Research at Teratai Social Home in Palembang also explains that classical music therapy has a significant effect in lowering blood pressure in the elderly (Sidik, 2020). Previous research also stated that OM chanting and Yoga Nidra were effective in optimizing blood pressure in people with hypertension (Anjana et al., 2022).

By applying pressure and stimulation to certain areas of the body, the function of acupressure therapy is similar to physical therapy. The benefits of acupressure include helping reduce stress, reducing anxiety, increasing body relaxation, increasing blood circulation to facilitate tissue oxygenation, and significantly reducing insomnia. This treatment method applies pressure with the fingers to areas associated with hypertension. Research on hypertension sufferers after being given acupressure therapy shows that acupressure therapy is effective in lowering blood pressure in hypertensive patients when applied 3 times a day for 2 consecutive days (Aminuddin et al., 2020), further research regarding acupuncture therapy which is carried out by inserting needles with the aim of channeling energy into the patient's body which is beneficial in reducing pain levels, increasing body fitness and speeding up the patient's health recovery process. The intervention is carried out 30 minutes once a week for eight weeks, which is effective in reducing blood pressure in hypertensive patients (Vilaval et al., 2019). The effect of huoxue sanfeng and tiaohu gampu acupuncture

treatment on reducing blood pressure in elderly brain tumor patients with significant and continuous blood pressure intervention once a day, 5 times a week for 8 weeks (Li et al., 2019).

For people with hypertension, foot massage is an additional therapy that can help lower blood pressure. Increasing blood and lymph circulation is wrong one benefit of foot massage. Study in the working area of the Gisting Regency health center Let's touch shows the impact of foot massage on reducing blood pressure in group of adults with hypertension, showed that foot massage can help speed up the body's metabolism (Patria, 2019). Previous research too said that there is an effect of foot reflexology therapy to lower blood pressure in hypertensive patients for 5 minutes after each intervention (Kotruchin et al., 2021). Meanwhile, research on breathing exercises purses the lips combined with number crunching provides an effective influence in Lowering blood pressure for 15 minutes every hour for 3 hours (Mitsungnern et al., 2021).

One of the alternative therapies above, consuming young coconut water is another complementary therapy that can be used to lower blood pressure. The reason is that young coconut water has high levels of potassium so it can stimulate the dilation of blood vessels by reducing membrane potential, thereby inhibiting smooth muscle contraction and lowering overall blood pressure. TPR, or peripheral resistance, which lowers blood pressure. Research in the Sumberejo Community Health Center working area shows that young coconut water relatively stabilizes blood pressure in hypertension sufferers (Sari & Purwono, 2022). Apart from that, we also researched cucumber juice which was proven to have hypotensive properties, namely lowering blood pressure. These properties arise from the water and potassium content of cucumbers, which draw sodium into the intracellular space and cause vasodilation, or the opening of blood vessels, resulting in balancing blood pressure. Cucumber juice therapy has been proven to have an effect on blood pressure in hypertensive patients (Setiawan & Sunarno, 2022).

CONCLUSION

Music therapy, acupressure therapy, acupuncture therapy, foot massage, young coconut water and cucumber juice are other treatments that help

Naura Farkhia Putri*, Fahrur Nur Rosyid

Universitas Muhammadiyah Surakarta

Corresponding author: *E-mail: j210190029@student.ums.ac.id

DOI: <https://doi.org/10.33024/minh.v7i5.214>

Effect of complementary therapy to blood pressure reduction in patients with hypertension: A literature review

optimize blood pressure in hypertensive patients. Combination therapy is an alternative treatment to reduce blood pressure significantly after implementing this therapy.

SUGGESTION

This approach can be used as an intervention or alternative to non-pharmacological blood pressure measures because it can drastically reduce blood pressure after therapy.

REFERENCES

Aminuddin, A., Sudarman, Y., & Syakib, M. (2020). Penurunan Tekanan Darah Penderita Hipertensi Setelah Diberikan Terapi Akupresur. *Jurnal Kesehatan Manarang*, 6(1).

Anjana, K., Archana, R., & Mukkadan, J. K. (2022). Effect of om chanting and yoga nidra on blood pressure and lipid profile in hypertension - A randomized controlled trial. *Journal of Ayurveda and Integrative Medicine*, 13(4), 100657. <https://doi.org/10.1016/j.jaim.2022.100657>

Asri, I. P., Salamah, N. P., Putri, A. M., Khairunnisa, A., Afifah, F., & Kusumastuti, I. (2022). Analisis Faktor Risiko Kejadian Hipertensi di Wilayah Kota Depok: Analysis of Risk Factors for Hypertension in the Kota Depok. *Journal of Public Health Education*, 1(3), 170–184.

Barus, M., Ginting, A., & Turnip, A. J. (2019). Pengaruh Pemberian Mentimun Terhadap Penurunan Tekanan Darah Pada Penderita Hipertensi Di Wilayah Kerja Puskesmas Pancur Batu Dusun Iv Tanjung Anom. *Jurnal Mutiara Ners*, 2(2), 230-237.

Cholifah, N., Setyowati, S., & Karyati, S. (2019). Pengaruh Pemberian Terapi Musik Suara Alam Terhadap Penurunan Tekanan Darah Pada Penderita Hipertensi Di Desa Pelang Mayong Jepara Tahun 2016. *Jurnal Ilmu Keperawatan Dan Kebidanan*, 10(1), 236–242.

Cholifah, N., Setyowati, S., & Karyati, S. (2019). Pengaruh Pemberian Terapi Musik Suara Alam Terhadap Penurunan Tekanan Darah Pada

Penderita Hipertensi Di Desa Pelang Mayong Jepara Tahun 2016. *Jurnal Ilmu Keperawatan dan Kebidanan*, 10(1), 236-242.

Fatichasari, H. D. (2019). Pengaruh Pemberian Jus Buah Belimbing Wuluh (Averrhoa Bilimbi L.) Terhadap Kadar Trigliserida Darah Tikus Putih (Rattus Norvegicus) Jantan Galur Wistar Yang Diberi Diet Tinggi Lemak. *Medical and Health Science Journal*, 3(2).

Herrod, P. J., Lund, J. N., & Phillips, B. E. (2021). Time-efficient physical activity interventions to reduce blood pressure in older adults: a randomised controlled trial. *Age and Ageing*, 50(3), 980-984.

Kotruchin, P., Imoun, S., Mitsungnern, T., Aountra, P., Domthaisong, M., & Kario, K. (2021). The effects of foot reflexology on blood pressure and heart rate: A randomized clinical trial in stage-2 hypertensive patients. *The Journal of Clinical Hypertension*, 23(3), 680-686.

Li, H.-J., Shen, P.-F., Gao, H., & Liu, J.-L. (2019). [Effect of acupuncture on blood pressure variability in elderly patients with cerebral infarction complicated with essential hypertension]. *Zhongguo zhen jiu = Chinese acupuncture & moxibustion*, 39(7), 685–688. <https://doi.org/10.13703/j.0255-2930.2019.07.001>

Ministry of Health of the Republic of Indonesia. (2019). Laporan Nasional Riskesdas 2018. Kementerian Kesehatan RI. Badan Penelitian dan Pengembangan Kesehatan. Retrieved from: <https://repository.badankebijakan.kemkes.go.id/id/eprint/3514/1/Laporan%20Riskesdas%202018%20Nasional.pdf>

Mitsungnern, T., Srimookda, N., Imoun, S., Wansupong, S., & Kotruchin, P. (2021). The effect of pursed-lip breathing combined with number counting on blood pressure and heart rate in hypertensive urgency patients: A randomized controlled trial. *Journal of Clinical Hypertension (Greenwich, Conn.)*, 23(3), 672–679. <https://doi.org/10.1111/jch.14168>

Naura Farkhia Putri*, Fahrur Nur Rosyid

Universitas Muhammadiyah Surakarta

Corresponding author: *E-mail: j210190029@student.ums.ac.id

DOI: <https://doi.org/10.33024/minh.v7i5.214>

Effect of complementary therapy to blood pressure reduction in patients with hypertension: A literature review

- Mufarokhah, H. (2020). Hipertensi dan Intervensi Keperawatan. Penerbit Lakeisha.
- Mukti, B. (2020). Penerapan DASH (Dietary Approach to Stop Hypertension) pada Penderita Hipertensi.
- Pamelia, I. (2018). Perilaku konsumsi makanan cepat saji pada remaja dan dampaknya bagi kesehatan. *Jurnal Ilmu Kesehatan Masyarakat*, 14(2), 144–153.
- Patria, A. (2019). Pengaruh masase kaki terhadap penurunan tekanan darah pada kelompok dewasa yang mengalami hipertensi. *Jurnal Kesehatan Panca Bhakti Lampung*, 7(1), 48–56.
- Putra, B. E. (2018). Kunci Penanganan Hipertensi Refrakter: Mendalami Entitas Hipertensi Esensial dan Sekunder. *Journal Of The Indonesian Medical Association*, 68(1), 1–3.
- Sari, R., & Purwono, J. (2022). Pengaruh Air Kelapa Muda Terhadap Penurunan Tekanan Darah Pada Pasien Hipertensi. *Jurnal Wacana Kesehatan*, 7(1), 47–54.
- Sari, Y. H., & Majid, M. (2019). Faktor-Faktor Yang Berpengaruh Terhadap Kejadian Hipertensi Pada Lansia Di Wilayah Kerja Puskesmas Maiwa Kab. Enrekang. *Jurnal Ilmiah Manusia Dan Kesehatan*, 2(1), 68–79.
- Setiawan, I. S., & Sunarno, R. D. (2022). Terapi Jus Mentimun Untuk Menurunkan Tekanan Darah Pada Penderita Hipertensi. *Jurnal Ilmu Keperawatan Dan Kebidanan*, 13(1), 276. <https://doi.org/10.26751/jikk.v13i1.1300>
- Sidik, A. B. (2020). Pengaruh Terapi Musik Klasik terhadap Penurunan Tekanan Darah Penderita Hipertensi pada Lansia. *Babul Ilimi Jurnal Ilmiah Multi Science Kesehatan*, 12(2).
- Soesanto, E., & Marzeli, R. (2020). Persepsi Lansia Hipertensi Dan Perilaku Kesehatannya. *Jurnal Keperawatan Dan Kesehatan Masyarakat Cendekia Utama*, 9(3), 244–251.
- Sumartini, N. P., Zulkifli, Z., & Adhitya, M. A. P. (2019). Pengaruh senam hipertensi lansia terhadap tekanan darah lansia dengan hipertensi di Wilayah Kerja Puskesmas Cakranegara Kelurahan Turida tahun 2019. *Jurnal Keperawatan Terpadu (Integrated Nursing Journal)*, 1(2), 47–55.
- Vilaval, T., Sasinan, W., Mayuree, C., Chananun, P., & Somchai, S. (2019). Effect of acupuncture on blood pressure control in hypertensive patients. *Journal of Traditional Chinese Medicine = Chung i Tsa Chih Ying Wen Pan*, 39(2), 246–250.

Naura Farkhia Putri*, Fahrur Nur Rosyid

Universitas Muhammadiyah Surakarta

Corresponding author: *E-mail: j210190029@student.ums.ac.id

DOI: <https://doi.org/10.33024/minh.v7i5.214>