

## The Effectiveness of Warm Lemongrass and Swedish Massage in Lowering Blood Pressure in Pregnant Women

Nita Wijayanti<sup>b</sup> | Indah Christiana<sup>a\*</sup> | Erlin Novitasari<sup>c</sup>

<sup>a,c</sup> Bachelor's Degree Program in Midwifery, University of Dr. Soekardjo

<sup>b</sup> Midwifery Professional Study Program, University of Dr. Soekardjo

\*Corresponding Author: [indahchristiana84@gmail.com](mailto:indahchristiana84@gmail.com)

### ARTICLE INFORMATION

#### Article history

Received (12 March 2026)

Revised (11 June 2026)

Accepted (17 June 2026)

#### Keywords

Hypertension, Swedish massage,  
Soaking feet in warm water with  
lemongrass, Pregnant mother

### ABSTRACT

**Introduction:** Hypertension During Pregnancy (HDP) is one of the leading causes of maternal death. If HDP is not managed, it will affect both the mother and the fetus. One therapy that can be used for HDP is a foot soak in warm boiled lemongrass water and Swedish massage. This therapy can improve blood circulation, increase blood supply to tissues, and stimulate vasodilation in blood vessels, thereby reducing blood pressure in pregnancy hypertension. This study aims to analyze the effect of a foot soak in warm boiled lemongrass water and Swedish massage on blood pressure among hypertensive pregnant women.

**Methods:** This study used a pre-experimental one-group pretest-posttest design. The study involved 20 hypertensive pregnant women recruited using total sampling. A data normality revealed that the distribution deviated significantly from the Gaussian model. Consequently, the Wilcoxon Signed-Rank Test was employed as a non-parametric alternative for the inferential analysis of the dataset.

**Results:** pre-intervention blood pressure averaged 157/91 mmHg, while post-intervention figures dropped to 135/81 mmHg. There was a significant decrease in blood pressure after the intervention ( $p=0,000$ ), the data demonstrate that the integration of warm lemongrass water immersion and Swedish massage effectively attenuates hypertension in the pregnant women.

**Conclusions:** Midwives in providing midwifery care to pregnant women with hypertension can use warm lemongrass foot soak therapy and Swedish massage in addition to using pharmacological therapy.

## Introduction

An indicator that shows the degree of maternal health is the Maternal Mortality Rate (MMR). Efforts to prevent maternal deaths, especially during childbirth, have become a concern both globally and nationally. One of the targets in the SDGs is to lower the MMR to fewer than 70 per 100,000 live births by 2030. However, recent data from Indonesia indicates a concerning trend; maternal fatalities rose significantly from 4,627 in 2020 to 7,389 in 2021, highlighting a substantial increase in mortality rates (Badan Pusat Statistik, 2023).

According to data from the Central Bureau of Statistics in 2022, the number of pregnant women in East Java province was 590,205. Riskesdas data from 2018 indicated the prevalence of hypertension in Indonesia for individuals over 18 years old was 36.9% in women and 31.3% in men. The 2021 maternal mortality profile identifies hypertension during pregnancy ( $n=123$ ; 9.62%) and hemorrhage ( $n=120$ ; 9.38%) as the leading specific contributors to death. Collectively, other underlying causes accounted for the remaining 68.18% of the maternal death toll (Dinas Kesehatan Provinsi Jawa Timur, 2022).

Hypertensive disorders in pregnancy represent vascular pathologies that may either pre-date conception or develop during the gestational period. Clinically, this condition is



characterized by a systolic blood pressure exceeding 140 mmHg and a diastolic pressure over 90 mmHg after the 20th week of gestation. While the highest mortality rates are concentrated in sub-Saharan Africa and Southeast Asia, Indonesian data from 2021 identifies COVID-19 (2,982 cases), hemorrhage (1,330 cases), and gestational hypertension (1,077 cases) as the primary drivers of maternal death. Hypertension in pregnancy can complicate 6-10% of pregnancies worldwide and cause 14% of maternal deaths globally (Belayhun et al., 2021).

According to records from the East Java Provincial Health Office, the 2021 maternal mortality profile was primarily driven by gestational hypertension and obstetric hemorrhage, representing 9.62% (123 cases) and 9.38% (120 cases) of total fatalities, respectively. A significant majority of deaths, totaling 872 individuals (68.18%), were attributed to various other clinical complications. A health problem that often arises during pregnancy and can cause complications is pregnancy hypertension. Complications of hypertension during pregnancy that are not promptly treated include labor hemorrhage, premature babies, seizures, brain bleeding, labor induction, fetal growth disorders, and can cause maternal and fetal death. Risk factors for hypertension during pregnancy can be used to identify increased risk of hypertensive disorders in pregnancy, including maternal age, primiparity, family history of hypertension, past health history or history of previous pregnancies, and current pregnancy history (Dinas Kesehatan Provinsi Jawa Timur, 2022).

The clinical management of hypertensive disorders during pregnancy encompasses both pharmacological and non-pharmacological therapy. Pharmacological therapy for hypertension in pregnancy involves the use of chemical drugs with dosages adjusted to the condition of the pregnant mother. Some drugs used as pharmacological therapy include methyldopa, nifedipine, and labetalol. Meanwhile, foot soak therapy is considered one of the non-pharmacological therapies that is easy and simple to perform independently. Foot soak therapy can improve blood circulation, increase blood supply to tissues, and lemongrass leaves contain geraniol and linalool, which can stimulate vasodilation in blood vessels, thus being able to lower blood pressure in pregnancy-induced hypertension (Givi et al., 2018).

Existing literature has extensively documented the independent efficacy of non-pharmacological interventions in managing gestational hypertension. Arianty et al. (2023) demonstrated that isolated massage therapy yields significant pre and post intervention reductions in blood pressure among hypertensive pregnant women (Arianty et al., 2023). Separately, Liszayanti (2019) established that warm lemongrass (*Cymbopogon citratus*) foot soaks function as an effective therapeutic modality for preeclampsia. This hydrotherapy leverages thermal-induced vasodilation to expand blood vessel diameter, thereby enhancing peripheral blood flow, improving oxygenation in edematous areas, and promoting systemic relaxation (Liszayanti F, 2019). While these studies confirm the physiological benefits of single-modality treatments including the biochemical properties of *Cymbopogon citratus* in alleviating musculoskeletal tension the current literature suffers from two critical gaps.

First, a critical mechanistic gap exists regarding the physiological limits of single modality interventions. While a foot soak induces localized vasodilation and mild systemic relaxation, it operates primarily through peripheral thermal receptors. Conversely, Swedish massage directly manipulates the central and autonomic nervous systems to suppress sympathetic activity. Previous studies (Augin & Soesanto, 2022), (Uliya et al., 2020) heavily relied on a single group, pre post design to observe these isolated effects, leaving the potential for therapeutic saturation or sub-optimal efficacy unexplored. Therefore, the true novelty of this research lies not merely in the mechanical combination of two therapies, but in investigating the synergistic potentiation between peripheral biochemical hydrotherapy (warm lemongrass foot soak) and systemic neuro-endocrine modulation (Swedish massage). By employing a rigorous comparative design with two distinct intervention groups, this study addresses a methodological gap in previous research. This



approach allows us to isolate and determine whether the sequential application of these modalities creates a compounding physiological effect where peripheral vasodilation physically prepares the vascular system to maximize the systemic, stress-reducing benefits of the subsequent massage thereby offering a more comprehensive, dual-action protocol for managing gestational hypertension.

Massage therapy is a non-pharmacological treatment for controlling blood pressure by lowering sympathetic activity and increasing parasympathetic activity. Thus, this therapy can reduce anxiety, stress, and lower blood pressure and heart rate in individuals with hypertension. Swedish Massage Therapy (SMT) is a complementary treatment that provides relaxation, thereby being able to lower stress-induced blood pressure elevation. Building upon these physiological benefits, this study aims to analyze the effect of a foot soak in warm boiled lemongrass water and Swedish massage on blood pressure among hypertensive pregnant women, thereby evaluating the potential of this integrated non-pharmacological protocol.

## Methods

### Study Design

This quantitative study, using a one-group pretest-posttest quasi-experimental design.

### Setting

This research was conducted from June to July 2024 at Puspa Medika Clinic in Jember. The research was carried out systematically in three sequential phases: a pre-test assessment, the intervention phase, and a post-test evaluation. In the implementation, the pre-test was conducted by measuring the respondents' baseline blood pressure using the calibrated digital sphygmomanometer following the aforementioned standard AHA guidelines. Immediately after, the standardized non-pharmacological intervention procedure was administered, and finally, the post-test blood pressure was remeasured using the exact same clinical standards to evaluate the final hemodynamic changes.

### Research Subject

The study involved 20 pregnant women in their second trimester with mild to moderate gestational hypertension and leg edema, selected through a total sampling technique. This sample size met the a priori power analysis justification ( $n \geq 19$ ) to detect substantial hemodynamic changes, with strict eligibility screening and informed consent approval. The inclusion criteria for this study were: (1) pregnant women in their second trimester (14–27 weeks), (2) diagnosed with mild to moderate gestational hypertension with a systolic range of 140–159 mmHg and/or diastolic 90–109 mmHg, (3) experiencing lower limb edema, and (4) not currently taking pharmacological antihypertensive drugs; while the exclusion criteria included: (1) a history of chronic hypertension before pregnancy or severe preeclampsia, (2) having open wounds, active skin infections, or severe varicose veins on the foot and calf area, and (3) a history of allergy to lemongrass (*Cymbopogon citratus*).

### Instruments

Data collection was facilitated through structured observation sheets, while blood pressure measurements were strictly standardized according to the American Heart Association (AHA) guidelines using a digital sphygmomanometer (Omron Model). To ensure instrument accuracy and data validity, the device underwent formal clinical calibration by an authorized medical equipment technician prior to the study, thereby establishing a zero baseline error. The Standard Operating Procedure (SOP) for blood pressure measurement required respondents to sit quietly and rest for at least 5 minutes before the test, with their bare upper arm supported at heart level



using a precisely fitted cuff. Measurements were executed twice at a 2-minute interval, and the mathematical average was documented as the final value to eliminate transient reading anomalies.

**Intervention**

The standardized non-pharmacological intervention procedure was administered by a certified therapist, consisting of 6 sessions distributed over a detailed timeline of 2 weeks (3 sessions per week). Each session lasted for a total of 35 minutes, beginning with a 15-minute warm lemongrass foot soak (using 3–4 chopped stalks boiled in 1 liter of water and mixed with 4 liters of cold water to maintain a therapeutic temperature of 38°C–40°C), which was immediately followed by a 20-minute Swedish massage (10 minutes per leg) administered with light-to-moderate pressure on the respondents' feet and calves across five sequential techniques, namely gentle touch (effleurage), kneading/muscle massaging (petrissage), rubbing movements (friction), percussion movements (tapotement), and vibration (vibration) (Adawiyah, 2020).

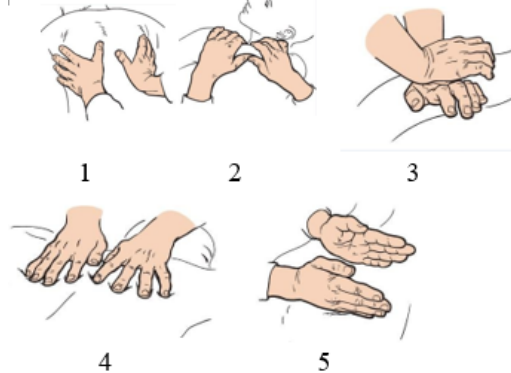


Figure 1. Swedish Massage Steps

**Data Analysis**

For data analysis, initial testing showed that the systolic and diastolic blood pressure data in this study fall into the ratio data type. After being tested using the Shapiro-Wilk method, it was found that the data were not normally distributed ( $0.002 < 0.05$ ). Since the main requirement for a regular (parametric) test was not met, the statistical analysis to see the difference before and after the intervention was switched to a non-parametric test, namely the Wilcoxon Signed-Rank Test, computed using SPSS for Windows version 25 because it is very reliable for analyzing two paired (dependent) datasets when the data are not normal.

**Ethical Clearance**

This study has passed ethical review by the ethics committee of STIKES Banyuwangi No. 159/01/KEPK-STIKESBWI/V/2024 dated May 14, 2024.

**Results**

Table 1 Respondent Characteristics

Characteristics	Frequency	Percentage
<b>Age</b>		
At Risk (<20/>35 years old)	4	20
Not at risk (20 – 35 years old)	16	80



<b>Pre-pregnancy BMI</b>		
Normal	4	20
Overweight	16	80
<b>Education</b>		
Low	5	25
Medium	13	65
High	2	10
<b>Occupation</b>		
Working	4	20
Not working	16	80

Based on the table above, it can be seen that almost all 16 respondents (80%) are aged 20 – 35 years with a pre-pregnancy Body Mass Index (BMI) of more (23 – 24.9) and are not employed, and the majority, 13 respondents (65%), have a secondary education (junior high/high school).

**Table 2.** The Effect of Integrated Warm Lemongrass Foot Soak and Swedish Massage on Blood Pressure Among Hypertensive Pregnant Women (n = 20)

Blood Pressure	Mean	Mediam	St.D	Min	Max	95%	Wilcoxon Z Score	p-value
<b>Sistole</b>								
Pre	157	159	11,105	140	174	151.81 – 162.19	-3.921	0,000
Post	131	133	8,551	115	142	127.00 – 135.00		
<b>Diastole</b>								
Pre	91	90	3,334	80	96	89.44 – 92.56	-3.925	0,000
Post	81	80	4,804	70	88	78.75 – 83.25		

From the table above, it can be seen that there was a decrease in systolic blood pressure of 26 mmHg and diastolic blood pressure of 10 mmHg after being given foot soak therapy using warm lemongrass decoction and Swedish massage. And the Wilcoxon test results showed a significant difference in the blood pressure of pregnant women with hypertension before and after the intervention, proven by a p-value of 0.000.

## Discussion

The results of the study on blood pressure measurements of respondents after an intervention for 2 weeks or 6 times showed a significant difference in the blood pressure of pregnant women before and after being given an intervention of warm lemongrass foot soak therapy and Swedish massage.

This process starts with a warm foot soak (38°C – 40°C) that transfers heat energy to the surface of the feet. The heat stimulates the local blood vessels to produce nitric oxide (NO), a natural substance that helps relax the muscles in the blood vessels. As a result, the blood vessels widen, blood flow becomes smoother, and the heart's workload in pumping blood decreases (Inayah, 2021; Masthura et al., 2024; Uliya et al., 2020). Additionally, the warmth of the water also stimulates nerve points on the soles of the feet that are reflexively connected to vital organs in the body (Yunisti, 2022).

Research conducted by Harahap and Nainggolan (2024) found a decrease in blood pressure in pregnant women with hypertension after soaking their feet in warm water with lemongrass decoction (Harahap. R.Y; Nainggolan, 2024). This is in line with a study conducted by Rina (2023) which found that foot soaking therapy with warm water and 2000 cc of lemongrass for 15-20 minutes had a positive impact. For pregnant women, soaking the feet in warm water and lemongrass provided a relaxing effect, a feeling of comfort, and the lemongrass aroma made the feet smell pleasant. Foot soaking therapy with warm water and lemongrass conducted for three consecutive days showed a decrease in blood pressure in pregnant women with hypertension by



5-15 mmHg in systolic and 6-15 mmHg in diastolic. However, not all women experienced a decrease over the three consecutive days (Rina; Kabuhung, 2023).

Aryani & Zayani (2020) research shows that foot soak hydrotherapy using warm water affects the reduction of blood pressure in pregnant women. The content of lemongrass, namely citronellal and citral, has analgesic and relaxing effects so it can easily spread throughout the body (Aryani & Zayani, 2020), (Ery et al., 2022). Furthermore, these lemongrass compounds are able to transmit messages to the brain, releasing various neurochemicals such as relaxants, stimulants, sedatives, and euphoric properties (causing a feeling of happiness) (Olyverdi, 2021). Warm lemongrass foot soak therapy can be combined with Swedish massage to lower blood pressure in pregnant women.

Swedish massage therapy is one of the complementary massage therapies believed to provide a relaxing response and can lower blood pressure caused by stress. This massage technique is one of the therapies used to manipulate soft tissues and muscles in the neck, waist, and back areas, so this therapy can provide smooth blood flow, increase hormone release, and stimulate parasympathetic activity. This in turn can reduce heart rate, breathing frequency, blood pressure, and can decrease stress (Khaledifar A, 2017), (Noviyanti, 2016), (Sonhaji et al., 2024). The effect of Swedish massage on circulation is influenced by movements and pressure applied from light to strong but gentle, which leads to vasodilation of blood vessels, thereby increasing blood flow (Adawiyah, 2020), (Nuraini et al., 2023).

Research conducted by Arianty et al. (2023) found changes in blood pressure in pregnant women, where before being given a Swedish massage, most respondents experienced grade 2 hypertension, and after being given a Swedish massage, most experienced grade 1 hypertension (Arianty et al., 2023). This aligns with research conducted by Sulistyanti (2024) which found that there was a significant decrease in systolic and diastolic blood pressure. Swedish massage therapy has the effect of improving blood circulation and making a person feel comfortable. Massage or hand touch has benefits such as reducing pain, inducing relaxation, and improving circulation. Swedish massage causes changes in the afferent nerve fibers towards the transmission cells, which then transmit to the central nervous system by reducing feelings of discomfort. This pleasant and comfortable feeling psychologically has a positive impact on feelings of calmness, comfort, relaxation, and reduces stress (Sulistyanti, 2024). Massage movements increase lung activity, which improves the respiratory system. Good breathing will become lighter but deeper when a pregnant mother is massaged, especially as the belly becomes larger. Massage movements on the front and back of the lungs expel mucus and toxins from the lungs (Adawiyah, 2020).

Even though the research statistics show convincing numbers, scientific objectivity still requires evaluating some potential biases (possible data deviations) that could affect the authenticity of the results. First, because this study used an experimental design without a comparison control group, there is a risk of history and maturation bias. Without a comparison group, it's hard to know whether the drop in blood pressure is purely due to the effects of lemongrass water and massage, or if it's influenced by other factors, like the rest effect (lying still) that pregnant women did during the 35 minute therapy session and the natural ups and downs of human blood pressure throughout the day.

Second, there's the potential for observer bias, since the researcher providing the therapy is also the one measuring blood pressure after the therapy without using any blinding methods. This opens up the possibility of subconscious expectations from the researcher when reading the blood pressure results. Third, there's a risk of the Hawthorne Effect, where pregnant women who know they're part of a trial for lowering high blood pressure may psychologically feel calmer. This psychological calmness from feeling observed can lead to a drop in blood pressure, not just because of the physical effects of lemongrass water and massage.

This study has several fundamental limitations that make the results not directly applicable to all cases. First, the sample size was only 20 respondents at a single clinic (Puspa Medika Clinic Jember), so it doesn't yet represent the diversity of physical conditions, body weight, or backgrounds of all pregnant women with hypertension elsewhere. Second, the study duration was quite short, only 2 weeks with 6 meetings. As a result, this study only looked at short-term (immediate) blood pressure reductions and cannot yet prove whether these effects last long or can prevent more severe complications like preeclampsia in the future.

Third, this study hasn't been backed up by objective lab tests due to limited facilities, so the medical pathway is only proven based on blood pressure readings without actual data on stress hormone (cortisol) levels or nitric oxide in the blood. Lastly, the researchers don't have full control over the respondents' lives outside of therapy hours. Even though conditions in the clinic are strictly managed, external factors at the respondents' homes like family stress levels, daily physical activity, diet (such as salt intake), and environmental noise could also affect changes in the blood pressure of the respondents being studied.

## Conclusion

There was a significant decrease in blood pressure in pregnant women with hypertension before and after being given warm lemongrass foot soak therapy and Swedish massage. Midwives should provide information to pregnant women experiencing hypertension to perform warm lemongrass foot soaks along with Swedish massage to lower blood pressure. For further researchers, it is recommended to conduct studies using the Randomized Controlled Trial (RCT) method, with a larger sample size and a longer research duration.

## Acknowledgments

The researcher expresses the highest appreciation to all parties who have provided support, inspiration, and technical as well as moral assistance in the completion of this research, especially to the respondents for their active participation and cooperation until this research was completed.

## References

- Adawiyah, R., F. N., & F. D. (2020). Pijat Swedia Terhadap Perubahan Tekanan Darah Pada Pasien Lansia Dengan Hipertensi. *Jurnal Penelitian Dan Kajian Ilmiah Kesehatan*, 6(1), 58–65.
- Arianty, D., Yunita, L., & Hidayah, N. (2023). Terapi Komplementer The Effect Of Swedish Massage Complementary Therapy On Lowering Blood Pressure In Pregnant Women. *JURNAL KEBIDANAN KESTRA (JKK)*, 5(2), 204–209. <https://doi.org/10.35451/jkk.v5i2.1605>
- Aryani, N., & Zayani, N. (2020). Penurunan Tekanan Darah Wanita Hamil dengan Perendaman Kaki Air Hangat. *Jurnal Sehat Mandiri*, 15(2), 81–89. <https://doi.org/10.33761/jsm.v15i2.294>
- Augin, A. I., & Soesanto, E. (2022). Penurunan tekanan darah pasien hipertensi menggunakan terapi rendam kaki air hangat dengan campuran garam dan serai. *Ners Muda*, 3(2). <https://doi.org/10.26714/nm.v3i2.8240>
- Badan Pusat Statistik. (2023). *Profil Kesehatan ibu dan anak 2022*.



- Belayhun, Y., Kassa, Y., Mekonnen, N., Binu, W., Tenga, M., & Duko, B. (2021). Determinants of Pregnancy-Induced Hypertension among Mothers Attending Public Hospitals in Wolaita Zone, South Ethiopia: Findings from Unmatched Case-Control Study. *International Journal of Hypertension*, 2021, 1–9. <https://doi.org/10.1155/2021/6947499>
- Dinas Kesehatan Provinsi Jawa Timur. (2022). *Profil Kesehatan Jatim 2022*. <https://dinkes.jatimprov.go.id/userfile/dokumen/PROFIL%20KESEHATAN%20JATIM%202022.pdf>
- Ery, Y. N., Edita, P., Delima, P., Fauzia, N., Irma, S., Mamik, R., Nur, W., Santi, R., Tuti, M., & Yeni, A. (2022). Pengaruh Rendam Kaki Air Hangat terhadap Penurunan Tekanan Darah pada Pre eklampsia Berat. *Jurnal Kebidanan*, 12(2), 102–113. <https://doi.org/10.35874/jib.v12i2.1049>
- Givi, M., Sadeghi, M., Garakyaraghi, M., Eshghinezhad, A., Moeini, M., & Ghasempour, Z. (2018). Long-term effect of massage therapy on blood pressure in prehypertensive women. *Journal of Education and Health Promotion*, 7(1), 54. [https://doi.org/10.4103/jehp.jehp\\_88\\_16](https://doi.org/10.4103/jehp.jehp_88_16)
- Harahap, R.Y; Nainggolan, R. (2024). Pengaruh Rendam Kaki Air Hangat Rebusan Sereh Terhadap Penurunan Tekanan Darah Ibu Hamil dan Ibu Bersalin di Desa Batu Gana Kecamatan Padang Bolak Julu. *Jurnal Ners*, 8(1), 461–468. <https://doi.org/https://doi.org/10.31004/jn.v8i1.21984>
- Inayah, M. , & A. T. (2021). Efektivitas Terapi Rendam Kaki Air Hangat terhadap Perubahan Penurunan Tekanan Darah Ibu Hamil Preeklampsia. *Jurnal Kebidanan Harapan Ibu Pekalongan*, 8(1), 24–31.
- Khaledifar A, N. M. K. B. K. A. M. A. (2017). The effect of reflexotherapy and massage therapy on vital signs and stress before coronary angiography: An open-label clinical trial. *ARYA Atheroscler*, 13(2), 50–55.
- Liszayanti F, R. S. (2019). Pengaruh terapi rendam kaki dengan air hangat dan serai terhadap tekanan darah ibu hamil penderita pre eklamsi. *Prosiding Mahasiswa Seminar Nasional Unimus*, 2, 299–309.
- Masthura, S., Fauziah, F., & Malia, A. C. (2024). Penerapan rendam Kaki Air Hangat terhadap Penurunan Tekanan Darah pada Ibu Hamil dalam Pencegahan Preeklampsia di Puskesmas Lampulo. *Jurnal Kesehatan Tambusai*, 5(4), 13532–13539. <https://doi.org/10.31004/jkt.v5i4.38227>
- Noviyanti, A. I. , H. N. M. (2016). Pengaruh Terapi Pijat Terhadap Pengurangan Nyeri Persalinan Kala I Fase Aktif Ibu Bersalin (Studi Kasus Di Kota Bandung). *The Southeast Asian Journal Of Midwifery*, 2(1), 1–8.
- Nuraini, O. I. A., Prajayanti, E. D., & Sutarwi. (2023). Application of Swedish Massage for Blood Pressure in Elderly Hypertension at Karanganyar Regional Hospital. *Jurnal Kegawatdaruratan Medis Indonesia*, 2(2), 152–165. <https://doi.org/10.58545/jkmi.v2i2.174>

- Olyverdi, R., A. A. C., A. M. S., Z. N. R., N. T., & S. T. (2021). Rendam Kaki Menggunakan Air Hangat dengan Campuran Jahe dan Serai Terhadap Penurunan Tekanan Darah Pada Penderita Hipertensi di Kelurahan Bukik Cangang Bukittinggi. *Empowering Society Journal*, 2(3), 236–242.
- Rina; Kabuhung, E. I. M. F. (2023). Efektivitas Terapi Rendam Kaki dengan Air Hangat dan Serai terhadap tekanan darah ibu hamil hipertensi di Wilayah Kerja UPT Puskesmas Kintap. *Health Reserch Journal of Indonesia (HRJI)*, 1(6), 293–299. <https://doi.org/https://doi.org/10.63004/hrji.v1i6.244>
- Sonhaji, S., Afriani, A. I., & Utami, R. M. (2024). Pengaruh Terapi Pijat Swedia Terhadap Tekanan Darah Pada Pasien Hipertensi Di Posbindu Kabupaten Pati. *Jurnal Manajemen Asuhan Keperawatan*, 8(2), 73–77. <https://doi.org/10.33655/mak.v8i2.195>
- Sulistyanti, A. I. D. S. A. D. (2024). Efektivitas Swedish Massage Therapy terhadap penurunan hipertensi pada ibu hamil. *Prosiding Seminar Informasi Kesehatan Nasional (SIKESNAS) 2024 Fakultas Ilmu Kesehatan Universitas Duta Bangsa Surakarta*, 216–221. <https://doi.org/https://doi.org/10.47701/sikenas.vi.3905>
- Uliya, I., Akademi Keperawatan Krida Husada, M., & Akademi Keperawatan Krida Husada, D. (2020). Terapi Rendam Kaki Menggunakan Air Hangat Dengan Campuran Garam Dan Serai Untuk Menurunkan Tekanan Darah Pada Penderita Hipertensi. *Akademi Keperawatan Krida Husada Kudus*, 7(2).
- Yunisti, F. W. R. (2022). Efektivitas Terapi Rendaman Citronella Grass Terhadap Perubahan Tekanan Darah Ibu dengan Preeklamsia. *Jurnal Kesehatan*, 13(1), 151–160. <https://doi.org/https://doi.org/10.35730/jk.v13i0.824>