

Literature Review: The Effect of Foot Massage with Lavender Aroma Therapy on Lowering Blood Pressure in Hypertensive Patients

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Abstract

In an effort to reduce the prevalence of hypertension, hypertension is treated with two types of therapy, namely pharmacological therapy and non-pharmacological therapy (Mulyati et al., 2013). Non-pharmacological therapy is divided into several approaches including: with ingredients (aromatherapy, sinshe), spiritual and supernatural approaches (meditation, yoga, reiki) and with skills (reflection massage) (Wahyuningsih & Astuti, 2013). The purpose of this study was to determine the effect and benefits of foot massage with lavender aromatherapy on reducing blood pressure in patients with hypertension through a literature study. This literature review writing method uses the PICO formula which then selects the appropriate articles through PubMed, proquest, CINAHL and Google Scholar using keywordsfoot massage,Lavender Aromatherapyeffect Of Foot Massage andLavender Aromatherapy, Blood Pressure, Vital signs, MassageTherapy on Blood Pressurepublished in the last ten years (2012–2022).of the six relevant articles based on the results of the analysis usingJBI Critical Appraisal Checklistall of them explained the same thing regarding the occurrence of a decrease or change in blood pressure after being given a foot massage intervention with lavender aromatherapy in patients with cardiovascular system disorders due to hypertension. Giving foot massage with lavender aromatherapy is effective in lowering blood pressure in hypertensive patients, therefore it is necessary to have a standard operating procedure (SOP) for therapy in order to get maximum results.

Keywords

foot massage; aromatherapy
lavender; blood pressure;
hypertension



I. Introduction

Hypertension is a disease that gets attention from all walks of life. Hypertension causes high morbidity (illness) and mortality (death).Data on the prevalence of hypertension in the World according to WHO in 2015, shows that around 1.13 billion people in the world suffer from hypertension, which means that 1 in 3 people in the world is diagnosed with hypertension and the prevalence of hypertension in Southeast Asia, such as: Thailand (23.6%), Myanmar (21.5%), Indonesia (21.3%), Vietnam (21.0%), Malaysia (19.6%), Philippines (18.6%), Brunei Darussalam (17.9%), and Singapore (16.0%) (WHO, 2016).WHO estimates that 1.15 billion cases in 2025 or about 29% of the total world population will suffer from hypertension, of which 333 million are in developing countries including Indonesia.The prevalence of hypertension in Indonesia has increased from 25.8% in 2013 to 34.1% in 2018 (Riskseddas, 2018). Hypertension is the cause of death for 7.1

million people worldwide, which is about 13% of total deaths, the prevalence is almost the same in both developing and developed countries (Sani, 2018)

Wahyuningsih & Astuti (2013) said that most (63.2%) cases of hypertension were undiagnosed and not well controlled. Uncontrolled hypertension can cause cardiovascular complications such as stroke, heart attack, heart failure, blindness and chronic kidney failure (Rudianto, 2013). In an effort to reduce the prevalence of hypertension mortality and morbidity, hypertension is treated with two types of therapy, namely pharmacological therapy and non-pharmacological therapy (Mulyati et al., 2013).

According to the Ministry of Health, non-pharmacological therapy is divided into several approaches including: with ingredients (aromatherapy, *sinshe*), with spiritual and supernatural approaches (meditation, yoga, reiki) and with skills (reflection massage) (Wahyuningsih & Astuti, 2013). There are many related studies that discuss reflexology which is useful for lowering blood pressure, one of which is foot massage, including research conducted by Wahyuni (2014), which states that extremity massage has an effect on reducing blood pressure in patients with hypertension. The results of this study are reinforced by Nugroho (2012), showing that foot reflexology is more effective than hypnotherapy in lowering blood pressure,

Massage techniques have an impact on the smooth circulation of blood flow, balance the flow of energy in the body and relax muscle tension. Although massage techniques will not have much impact on patients with severe hypertension, several studies have proven that massage can lower blood pressure in patients with mild and moderate hypertension (Dalimartha, 2018; Sutanto, 2012). One of the movements in massage, namely effleurage carried out in the leg area can cause vasodilation of peripheral blood vessels, and the effect is to facilitate back blood flow from the lower extremity area to the heart (Turner, WA, 2005). In the selection of aromatherapy to be used in massage, it is adjusted to the efficacy of each aromatherapy. Lavender essential oil is most commonly used for massage because the aldehyde content which is irritating to the skin is only 2% and is not toxic. The ester content in lavender works gently on the skin and provides a calming effect (Price, 1997; Koensoemardiyah, 2014). The relaxing effect of the massage is further enhanced by lavender essential oil. The impact of massage with lavender essential oil on the body is to stimulate the parasympathetic nervous system and reduce muscle tension so that it can lower blood pressure (Herliawati, 2014) The relaxing effect of the massage is further enhanced by lavender essential oil. The impact of massage with lavender essential oil on the body is to stimulate the parasympathetic nervous system and reduce muscle tension so that it can lower blood pressure (Herliawati, 2014) The relaxing effect of the massage is further enhanced by lavender essential oil. The impact of massage with lavender essential oil on the body is to stimulate the parasympathetic nervous system and reduce muscle tension so that it can lower blood pressure (Herliawati, 2014). Marketing is a process of planning and execution, starting from the conception stage, pricing, promotion, to the distribution of goods, ideas and services, to make exchanges that satisfy the individual and his institutions (Dianto in Asmuni et al, 2020). According to Tjiptono in Marlizar (2020) marketing performance is a function that has the greatest contact with the external environment, even though the company only has limited control over the company's environment. In the world of marketing, consumers are assets that must be maintained and maintained their existence in order to remain consistent with the products we produce (Romdonny and Rosmadi, 2019).

In the Nursing Intervention Classification (NIC) book, foot massage intervention is a form of non-pharmacological nursing intervention included in massage therapy to increase a sense of comfort, relaxation and calm (Gloria M Bulecek and Howard K Butcher and

Joane M Dochterman and Cheryl M Wagner, 2016). The benefits of foot massage are to reduce pain in the body, increase endurance, help deal with stress, relieve migraine symptoms, reduce high blood pressure, and reduce dependence on drugs (Wahyuni, 2014). The basic techniques that are often used in reflexology include: the thumb spread technique, rotating the hands and feet at one point, as well as pressing and holding techniques. Stimuli in the form of pressure on the hands and feet can emit waves of relaxation throughout the body (Wahyuni, 2014). This is supported by the results of Wijayanto's research, (2015) which states that massage therapy with lavender aromatherapy has an effect on reducing blood pressure and research. The results of Budi Utami's research (2019) showed that the effect of massage therapy using lavender aromatherapy oil in Hamlet Peni Kuwiran Banyudono Boyolali can lower blood pressure systolic systolic from 145 mmHg to 126 mmHg, and diastolic blood pressure from 96 mmHg to 80 mmHg with p value p value = 0.001 ($p < 0.05$)

Based on the description of the data above, the writer is interested in conducting a literature review study: the effect of foot massage with lavender aromatherapy on blood pressure of hypertensive patients.

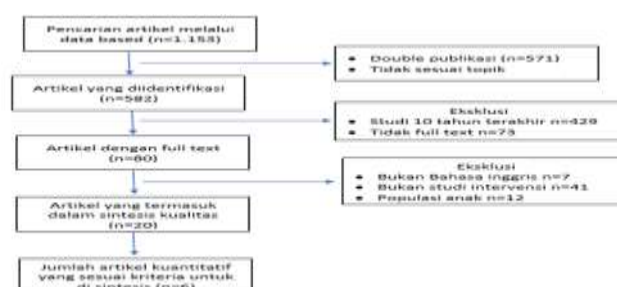
II. Research Method

The data used in this study is secondary data collected from the results of previous studies. This search information comes from: PubMed, proquest, CINAHL and Google Scholar using keywords foot massage Lavender Aromatherapy effect Of Foot Massage and Lavender Aromatherapy, Blood Pressure, Vital signs, Massage Therapy on Blood Pressure with span of the last 10 years.

Search results found 1,153 article titles and after being identified 80 articles were found with The full text was then assessed for article quality and finally 6 articles that met the criteria for systematic review. The process of selecting the studies reviewed consists of 4 steps. The first step/Identification of all search databases obtained is combined and then identified duplicates from the same study will be deleted. The second step is to screen the authors for the year of publication and articles with full text. The third step (Eligibility) the author conducts a feasibility test according to the inclusion criteria that have been previously determined to be included while those who do not meet the criteria are excluded (not English, child population, and not the intervention study).

Next the author conducts a quality assessment of the articles that have been tested for feasibility (Included). The guideline used is to use the JBI Critical Appraisal Checklist instrument, this assessment is to assess the methodological quality of a study and to determine the extent to which a study has addressed possible biases in its design, behavior and analysis. The results of this assessment can then be used to inform the synthesis and interpretation of research results (fte Joanna Briggs Institute, 2017).

The results of the selection of articles can be described in the Flow Diagram below:



III. Result and Discussion

Data extraction from various types of literature was carried out, and the results are presented in the table below:

No	Author (yr)	Title	Research purposes	Method	Sample	Research result
1	(Eguchi et al., 2016)	<i>The Effects of Aroma therapy with Foot Massage on Blood Pressure and Anxiety in Japanese Community-Dwelling Men and Women: A Crossover Randomized Controlled Trial</i>	The aim of this study was to investigate the effect of foot massage with aromatherapy on blood pressure, anxiety, and quality of life in hypertensive Japanese women using a crossover randomized controlled trial.	RCT: 57 eligible participants aged 27 to 72 years were randomly assigned to 2 intervention groups (group A: n = 29; group B: n = 28) for foot massage 12 times over 4 weeks.	57 people	Foot massage with aromatherapy significantly lowers the value mean SBP (p=0.02), DBP (p=0.006), and anxiety (p=0.003) and the proportion of participants with anxiety (p=0.003).
2	Gürçan Arslan, zlem Ceyhan, Mukadder Mollaoğlu 1 (2020)	<i>The influence of foot and back massage on blood pressure and sleep quality in females with essential hypertension: a randomized controlled study</i>	This study was conducted with the aim of investigating the effect of foot and back massage on blood pressure and blood pressure sleep quality in women with essential hypertension	Randomized controlled studies carried out according to CONSORT rules. Women with essential hypertension applied a total of six legs and back sessions for 30 minutes massage twice a week for 3 weeks. This study involved a total of 90 patients, 60 of whom were in the intervention group (30 respondents were conducted foot massage, 30 respondents received back massage) and 30 respondents in the control group	90 people	Six sessions of foot massage and back massage detected causes a decrease in systolic blood pressure (SBP) and diastolic blood pressure (DBP) and the difference was statistically significant (p < 0.001).
3	Ju et al., (2013)	<i>Effects of aroma massage on home blood pressure, ambulatory blood pressuresure, and sleep quality in middle-aged women with hypertension.</i>	Evaluating the effectiveness of Aroma Massage in lowering BP in women in their 50s	Quasi-Experiment, participants who have been divided into 3 groups, namely the AM group (n = 28), the placebo group (n = 28), and the control group (n = 27) were asked to rest for 10 minutes before measuring BP, then given an intervention once a week. for 4 weeks	83 people	After intervention for 4 weeks (1 time a week) the results obtained a significant reduction in BP up to 15 mmHg, TDD 4 mmHg, and QoS (p=0.001; p=0.005; p=0.002)

4	Budi Utami (2019)	Effect of lavender aromatherapy massage therapy on reducing blood pressure in hypertensive patients	Knowing the effect of lavender aromatherapy massage therapy to reduce blood pressure in patients with hypertension	The method used is the Quasi Experiment method with a research design of one group pretest - posttest design. Massage therapy with lavender aromatherapy was carried out four times in two weeks. The sampling technique used was purposive sampling. The instrument used is the DESIGN . scale	15 respondents	lavender aromatherapy oil in Dukuh Peni Kuwiran Banyudono Boyolali can reduce systolic blood pressure from 145 mmHg to 126 mmHg, and diastolic blood pressure from 96 mmHg to 80 mmHg with p value p value = 0.001 (p <0.05).
5	Ali mohammad et al., (2018)	<i>Effect of hand and foot surface stroke massage on anxiety and vital signs in patients with acute coronary syndrome: A randomized clinical Trial</i>	The purpose of this research is to investigate the effect of hand and foot surface stroke massage to reduce anxiety levels and vital signs in patients with acute coronary syndrome (ACS).	A single blind clinical trial was conducted in 70 patients with ACS. The patients randomly assigned to case and control groups. Anxiety level controlled 30 minutes before and 15 minutes after the intervention. Vital signs were checked in the previous two groups, immediately after, 60 minutes, and 90 minutes after the intervention.	70 people	there is a significant average difference after the intervention, in the level of anxiety, blood pressure, heart rate, and respiratory rate were significant.
6	(Hon.,G hon.L.,et al., 2016)	<i>Effectiveness of Acupressure on the Taichong Acupoint in Lowering Blood Pressure in Patients with Hypertension: A Randomized Clinical Trial</i>	Destination. To evaluate the effectiveness of acupressure at the Taichong point in lowering systolic and diastolic blood pressure (BP) in hypertensive patients.	Method. Eighty patients with hypertension attending an outpatient cardiology department in central Taiwan were included in this randomized clinical trial. Acupressure applied to Taichong points in experimental group (n = 40) and first metatarsal (acupoint sham) in the control group (n = 40). Blood pressure is measured by electronic monitoring before and immediately 15 minutes and 30 minutes after acupressure	80 people	there was a significant difference in systolic and diastolic BP between the experimental and control groups immediately and 15 and 30 minutes after acupressure (p < 0.05).

Characteristics of respondents shown in the literature include age, gender, genetic family history, and duration of hypertension. Age is one of the internal factors in a person who has an important role in causing hypertension. Several articles reviewing the age most vulnerable to hypertension are those who are over 40 years old. Based on the analysis, the youngest age of hypertension was above 40 years, with the oldest being 90 years. With an average age of 50 years. This study is in line with (Zhang et al., 2021) regarding risk factors for hypertension, one of which is age >40 years.

An overview of the 6 articles reviewed is summarized in the characteristics related to foot massage intervention with the aim of assessing vital signs, especially blood pressure. This systematic review consists of 5 articles with an RCT design and 1 article using an experimental Quasy design.

3.1 Foot massage intervention duration

Foot massage intervention is one of the non-pharmacological nursing interventions included in massage therapy to increase a sense of comfort, relaxation and calm which is mentioned in the Nursing Intervention Classification (NIC) book (Gloria M Bulecek and Howard K Butcher and Joane M Dochterman and Cheryl M Wagner, 2016). Three articles that explain the same thing about the timing of giving foot massage, namely for 4 weeks is enough time to provide benefits in the form of changes in vital signs ((Eguchi et al., 2016: Ju et al., 2016: Ju et al., 2016). al., 2013: Supa'at et al., 2013). While the article Gurcan Arslan explained that enough given for 3 weeks already provides benefits for lowering blood pressure. In addition to the length of the intervention, the duration of the foot massage is also discussed in this review, which is described by Ju et al., (2013) with enough giving once a week for 4 weeks has given results. Meanwhile, according to Eguchi et al., (2016) interventions that are only given once a week are not enough to get maximum results so that more time is needed, namely 12 times for 4 weeks. Gurcan Arslan (2020) mentions six 30-minute sessions twice a week for 3 weeks.

3.2 Time Blood Pressure Measurement

Time Blood pressure measurement also needs to be considered so that it can provide accurate measurement results both before and after foot massage intervention. In this review described from the articles Ju et al., (2013) and Gurcan Arslan (2020) recommend that patients rest 10 minutes before taking measurements after giving the intervention, while the study was conducted Hon., Ghon.L., et al (2016) mention 30 minutes after intervention.

3.3 Change Blood pressure

The benefits of foot massage intervention are changes in blood pressure, both systolic and diastolic blood pressure. Of the six articles reviewed, all of them explained the same thing regarding the occurrence of a decrease or change in blood pressure after being given foot massage intervention in patients with cardiovascular system disorders due to hypertension.

IV. Conclusion

Of the six articles analyzed all of them explained the same thing regarding the occurrence of a decrease or change in blood pressure after being given a foot massage intervention with lavender aromatherapy in patients with cardiovascular system disorders due to hypertension.

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