

Prevention Measures And How To Handle Pre-Eclampsia (Literature Review)

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Abstract

Preeclampsia is a danger sign for pregnant women, especially at 20 weeks gestation, marked by increased blood pressure. At this time, preeclampsia is the second largest contributor to deaths globally, with preeclampsia worldwide 10% -15%. In Indonesia, there is an increase of 2% every year, indicating that adequate treatment and prevention efforts are needed. At present, most research on the prevention and management of preeclampsia discusses pharmacological treatment, not discussing nursing interventions. This Literature review aims to find out various prevention efforts for preeclampsia that are developing at this time. The research method is a literature study of research results published in 2010-2019. The strategy used to search literature is to use keywords preeclampsia, prevention, treatment methods, and nursing interventions, using Google Scholar, PubMed, Pro-Quest, Science Direct database, which reviewed using The Joanna Briggs Institute Critical Appraisal tools. The study results illustrate that there are several ways to reduce blood pressure. From 10 articles found one prevention namely the article about consuming food and nine treatments, include: hypnotherapy, , foot massage, foot bath with warm water, cupping therapy, SEFT therapy, and murotal hearing. All articles described that intervention could reduce blood pressure, but the articles do not explain the reduction mechanism based on the intervention used. This Literature Study is expected to be information and consideration for health workers, pregnant women, and the community to handle pre-eclampsia mothers, with much interventions can do to reduce pre-eclampsia.

Keywords: Eclampsia, management of preeclampsia, prevention efforts.

Introduction

Preeclampsia is the second largest contributor to death in the world after bleeding. From various research results, it is found the problems in carrying out pregnancy examinations to health services. It is because in certain areas it is still difficult to reach health services so that the impact on the low number of maternal visits and the lack of awareness of mothers to check their pregnancy. According to (Simarmata et al., 2012) revealed that the incidence of pregnancy complications is related to the area of residence, where mothers who live in rural areas tend to be more at risk because of the lack of access to health services. Community perspectives on access to services are still difficult to reach, because the road to health services is difficult and also difficult to reach, and existing health workers are less friendly in providing services and cannot yet blend in with the community (Kemenkes RI, 2017).

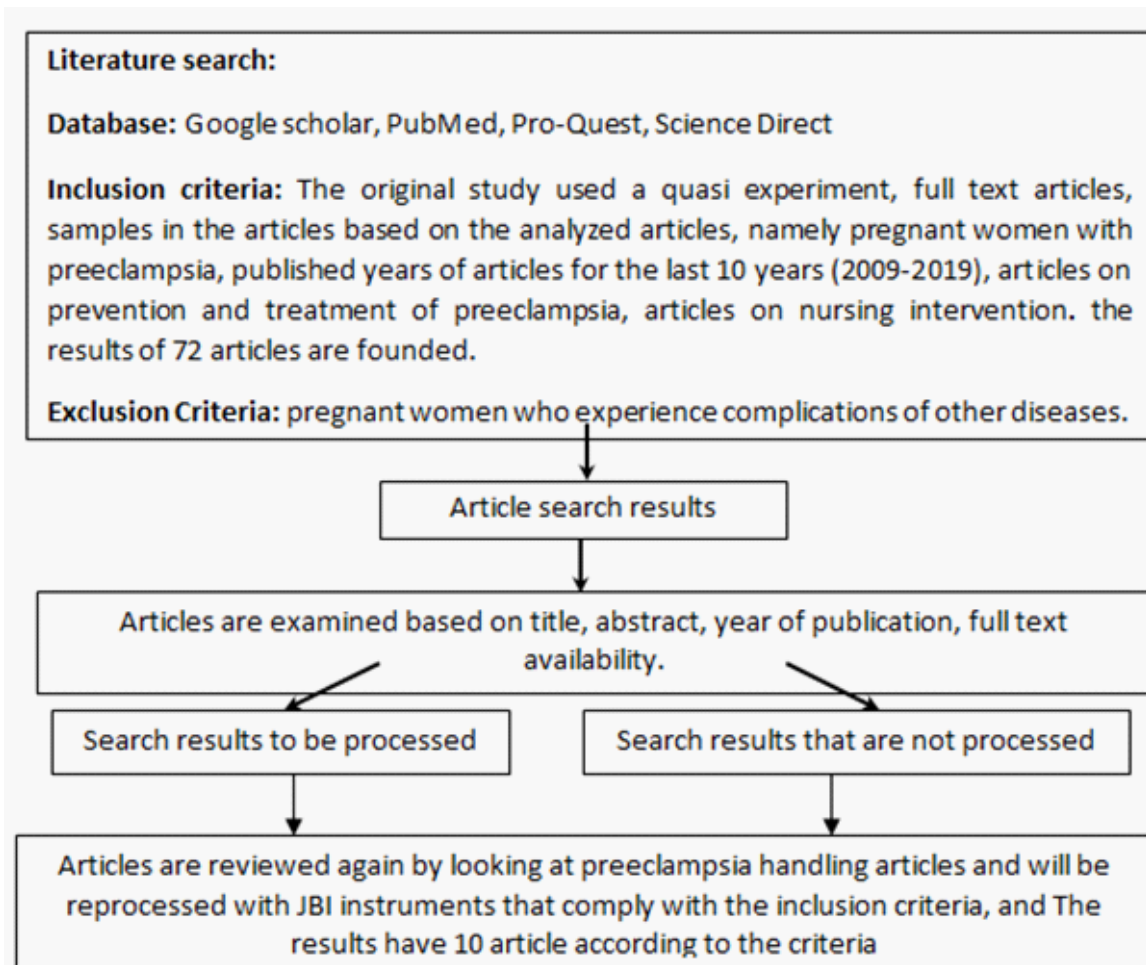
From the results of the Study Of Literature Khanum and de Souza (2018), it is shown that prevention of preeclampsia is one of them by giving calcium supplements because it can reduce the risk of preeclampsia that is useful for forming strong bones and teeth, developing strong heart, nerves, and muscles, developing heart rhythm and normal blood clotting ability. At present, research on the prevention and management of preeclampsia has been carried out in Indonesia, but most of these studies discuss pharmacological treatment, not explaining the nursing intervention. For this reason, there is a need for a literature review on the prevention and treatment of preeclampsia with nursing intervention.

Based on previous exposure information, it is described that most pregnant women have less knowledge and access to health services that are difficult to reach and the lack of awareness of mothers to check their pregnancy. To overcome these problems, health workers must know how to prevent and manage preeclampsia. due to this reason, it is necessary to have clear information on the literature review study that discusses prevention efforts and how to manage preeclampsia. This literature review aims to see how prevention efforts and how to handle

preeclampsia

Research Methodology

The data used are secondary data taken from national and international scientific articles from 2009-2019 with a database used to search for articles on preeclampsia, nursing interventions for prevention, and how to treat preeclampsia. The inclusion criteria in this article use PICO technique where the article founded is The original study used a quasi experiment, full text articles, samples in the articles based on the analyzed articles, namely pregnant women with preeclampsia, published years of articles for the last 10 years (2009-2019), articles on prevention and treatment of preeclampsia, articles on nursing intervention. And the Exclusion Criteria: pregnant women who experience complications of other disease. The database used is Google Scholar, PubMed, Pro-Quest, Science Direct. Articles obtained from all searches were screened and identified through article titles, year of publication, availability, and full text using the critical appraisal instrument from JBI (Joanna Brigs Institute) to provide an assessment of each article. The article will be fully read, then analyzed and assessed using instruments from JBI to criticize each article and make a presentation. The review selection process can be seen in Figure 1(research steps)



Results

The number of articles obtained was 72 articles, which had previously been organized and identified according to the article title, year of publication, availability, and full text. The article is then sorted again based on abstract and year of publication so that the

results of 33 articles are obtained. Then the article was sorted again about preeclampsia, how to prevent it, and how to handle it, and found 12 articles to be read in total but 2 articles were errors so that only 10 articles would be identified and analyzed. The results of the analysis will be presented in the following table:

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No	Research	Journal Search Results
1	<p>Title</p> <p>Research purposes</p> <p>Place of research</p> <p>Research sample</p> <p>Research methods</p> <p>Prevention and Treatment Measures</p> <p>Result</p>	<p>The Effectiveness of Soaking Feet With Warm Water Against Decreased Blood Pressure in Pregnant Women with Preeclampsia Author: Christina Febri Sabattani, Machmudah, Mamat Supriyono Year: 2016</p> <p>to find out the effectiveness of soaking feet with warm water to reduce blood pressure in pregnant women with preeclampsia</p> <p>In Semarang</p> <p>16 pregnant women with preeclampsia</p> <p>The research design uses Quasy Experiment with one group pretest and posttest design. Data analysis using Mc Nemar statistical test to determine the effectiveness of variables</p> <p>This research is handling the foot bath technique with warm water. Steps were taken by the client to sit on a chair with a relaxed and lean, then pour warm water in a bucket/basin to a temperature of 37 ° C-39 ° C soak feet to the wrist limit into the bucket/basin for 15-20 minutes, then remove it both feet, rinse with cold water, then dry the feet using a towel. The results showed after soaking the feet with warm water at 39 ° C for 15 minutes affect the blood pressure of pregnant women with preeclampsia.</p> <p>Based on the results of research from 16 pregnant women illustrate that before soaking feet with warm water all mothers experience high blood pressure and after soaking feet with warm water all of these pregnant women experience a decrease in blood pressure with an average reduction of 3 mmHg to 9 mmHg.</p>
2	<p>Title</p> <p>Research purposes</p> <p>Place of research</p> <p>Research sample</p> <p>Research methods</p> <p>Prevention and Treatment Measures</p> <p>Result</p>	<p>Carrot Juice Giving Impacts Blood Pressure in Trimester III Pregnant Women With preeclampsia Author:(Maria et al., n.d.) Year: 2019</p> <p>to determine the effect of carrot juice administration on blood pressure in third-trimester pregnant women with preeclampsia</p> <p>At Turen health center</p> <p>The study sample consisted of 18 pregnant women with preeclampsia</p> <p>This research design uses pre-experiment with a pre and post-test-design approach.</p> <p>This research is handling by giving 80 gr carrot juice/portion given once a day for one week. The instrument used in this study was an observation sheet that is the measurement of blood pressure in the morning before and after treatment, the measuring instrument used in this study was the mercury blood pressure meter</p> <p>The results showed that after giving carrot juice for 7 days from 18 preeclampsia pregnant women who had decreased blood pressure by 15 people (83.3%) and 3 people (16.7%) were still relatively high.</p>

3	Title	Effect of Dry Cupping Therapy on Blood Pressure in Preeclampsia Mothers Author: Eliyana, Y., Nooryanto, M., & Poeranto, S Year: 2019
	Research purposes	To overcome mothers who have preeclampsia Developed, one of which is dry cupping as an option to reduce blood pressure
	Place of research	at Malang
	Research sample	The sample of this study consisted of 17 samples in the treatment group and 17 samples in the control group.
	Research methods	The research used was quasi-experiment
	Prevention and Treatment Measures	Preeclampsia mothers consisted of 17 treatment groups and 17 control groups. In both groups, blood pressure observations were made twice on the 3rd day and 4th day. Measures given to the treatment group were standard therapy for lowering blood pressure accompanied by dry cupping therapy, whereas in the control group the measures given were standard therapy for lowering blood pressure.
	Result	From the results of the study, the difference in systolic blood pressure in preeclampsia in the control group 148.82 while the treatment group 150. And diastolic in the treatment group 92.94 while in the control group 89.41.
4	Title	The administration of Siam Pumpkin has implications for changes in blood pressure in pregnant women with preeclampsia Author: Indah Jayani Year: 2016
	Research purposes	To determine the effect of administration of conjoined pumpkin on changes in blood pressure in preeclamptic pregnant women
	Place of research	At Kediri
	Research sample	The sample in this study was 15 respondents
	Research methods	This type of research is pre-experimental with the One Group Pre Test Post Test Design approach
	Prevention and Treatment Measures	This study collected data by the door to door or visiting every house of pregnant women with preeclampsia to be sampled. Before the treatment the researchers measured the blood pressure of preeclampsia pregnant women (pre-test), then continued the treatment by giving pumpkin juice, the first pumpkin peeled, washed clean Giving water for 2 ginger
	Result	from the 15 respondents, before giving chayote to mothers who had preeclampsia as many as 13 people and 2 people with normal blood pressure, after giving chayote that was still preeclampsia as many as 7 people (46.7%) while those who experienced a decrease in blood pressure or normal were 8 people. (53.3 %). After being given ginger water for 2 weeks, the intervention group experienced a decrease in systolic

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5	Title	Effects of Ginger on Changes in Blood Pressure Author: TJEN, V. M et.al Year: 2018
	Research purposes	This study aims to determine the effect of giving ginger to changes in blood pressure before and after 2 weeks of giving ginger
	Place of research	at Batua Health Centre
	Research sample	20 Respondent
	Research methods	Quasi-Experimental with PreTest and Post Test Design.
	Prevention and Treatment Measures	Provision of ginger water for 2 weeks by giving 4 grams of powdered ginger and then mixed with 200ml warm water in one drink
	Result	After being given ginger water for 2 weeks in the intervention group experienced a systolic decrease of 152.55 mmHg while in the control group an increase of 149.09 mmHg. The diastolic intervention group decreased by 94.18 mmHg while the control group showed a diastolic of 93.64 mmHg ie an increase.
6	Title	The Effect of Listening to Murottal on Reducing Blood Pressure in Pregnant Women Preeclampsia in Rsia Pku Muhammadiyah Tangerang Author: Kartini, Yudhia Fratidhina, Heni Kurniyati. Year: 2016
	Research purposes	To find out whether there is an effect of murottal listening on the decrease in blood pressure in preeclampsia pregnant women
	Place of research	at Tangerang
	Research sample	The sample of this research is 30 Mother. 15 control groups and 15 intervention groups
	Research methods	use approach quantitative research design with Quasi Experiment, with design one group pretest and posttest.
	Prevention and Treatment Measures	Data collection in this research is primary data collection using interviews and observations. The murottal alquran technique is proven to provide a calm and relaxing effect because it will provide a positive perception response that can stimulate the hypothalamus to release endorphins, the hormones that make a person feel happy so they can lower blood pressure.
	Result	From the results of research on 30 mothers there were intervention and control groups, average systolic blood pressure the post-test intervention group was 152 mmHg, and the control group 161 mmHg showed that the mean diastolic blood pressure post-test of the intervention group was 85 mmHg and the group control 89 mmHg.

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	Title	The Effect of SEFT (Spiritual, Emotional, Freedom, Technique) Therapy on Reducing Blood Pressure in Patients with Preeclampsia Author: Lusy Indah Retno Ayunengtyas Year: 2017
	Research purposes	This study aims to determine the effect of SEFT therapy on Reducing Blood Pressure in Patients with Preeclampsia
	Place of research	at Jombang
	Research sample	The research sample consisted of 28 respondents.
	Research methods	a quantitative approach experiment with the One Group Pretest Posttest Design
	Prevention and Treatment Measures	The instruments used in this study were tensimeter, observation sheet, and SOP. The application of SEFT therapy which is a relaxation technique using tapping at certain points on the body so that it can control cortisol.
	Result	Of the 28 pregnant women, 10 respondents (35.7%) had a decrease in blood pressure after SEFT on systole 110 mmHg and 19 respondents (67.9%) had the majority of mothers experiencing a decrease in blood pressure.
8		
	Title	Modification of Foot Massage to Reduce Blood Pressure in Pregnant Women with Preeclampsia Author: Ermiati, E., Setyawati, A., & Emaliyawati, E Year: 2018
	Research purposes	This study aims to determine the effectiveness of complementary foot massage therapy to reduce blood pressure in pregnant women with preeclampsia.
	Place of research	at Jatinangor Health Centre
	Research sample	The sample in this study was 30 pregnant women with preeclampsia at the Jatinangor Health Center. Samples were selected using consecutive sampling techniques.
	Research methods	This study uses a quasi-experimental design with a time series approach and is analyzed using the Friedman Test. The research instrument was an observation sheet including demographic respondent data, clinical data, blood pressure data
	Prevention and Treatment Measures	Non-pharmacological therapies are effective in dealing with high blood pressure including foot massage. Foot massage has both physiological and psychological benefits, two steps of data collection. First, the respondent's blood pressure was measured by researchers without any intervention for 6 days. Second, respondents 7-12 have a 20-minute message and observe blood pressure in the first minute before the massage (pretest), and 30 minutes after the massage (post-test)
	Result	Of the 30 pregnant women, all of these women experienced a decrease in blood pressure after foot massage intervention for 1-8 days.

9		<p>Effect of Decoction of Starfruit Leaf Decoction in Reducing Blood Pressure of Preeclampsia in Pregnant Women Author: Anggreni, D., Mail, E., & Adiesty, F. Year:2018</p>
	Title	
	Research purposes	to prove the effect of starfruit leaf decoction on the blood pressure of preeclampsia pregnant women
	Place of research	at Jombang
	Research sample	20 Respondents
	Research methods	This research is an experimental study by giving two treatments a week for one month and observing. Data collection techniques with purposive sampling
	Prevention and Treatment Measures	researchers held treatment twice a week, for 1 month. Routine consumption for 1 month is expected to reduce blood pressure. Of the 20 respondents divided into 2 groups of respondents, 1 group was given boiling starfruit leaf boiled water to drink and one group was not given starfruit leaf boiled water (given a placebo). This research instrument uses an observation sheet that aims to find an increase or decrease in hypertension status of starfruit decoction of leaves given twice a week routinely for 1 month and at the end of each week a blood pressure check is made to record the results of the examination.
	Result	From 20 respondents there were intervention groups and control groups. In the control group, it was found that a very slight decrease of only 1.9 mmHg after starfruit boiled water was given. And in the intervention group decreased by 12.3 mmHg.
10		<p>Role of Hypnotherapy for the prevention of preeclampsia Author: Nurma Afiani, and Ari Damayanti W. Year: 2014</p>
	Title	
	Research purposes	This study aims to identify the effect of hypnosis on reducing blood pressure in women who are preeclampsia
	Place of research	at Mojokerto
	Research sample	There were 40 respondents (20 treatment groups and 20 control groups)
	Research methods	The method used is Quasi-experimental with a pre-post control group.
	Prevention and Treatment Measures	This hypnosis therapy uses psychological techniques that bring a person into the subconscious characterized by deep relaxation, focused attention, and the ability to receive suggestions.
	Result	The average systolic blood pressure decreased 9mmHg after receiving hypnosis therapy, while the mean diastolic blood pressure decreased 14mmHg after receiving hypnosis therapy.

Discussion

Based on the results of the analysis can be described handling the management of mothers with preeclampsia using a variety of ways, including Foot massage, foot soaking, hypnotherapy, murottal hearing, and drinking. From this research can be obtained 10 article intervention can be discuss

This foot massage is a therapy in the form of massage slowly on the leg area carried out 20 minutes a day for 5 days in a safe area that does not cause contractions (Famela, 2016). The foot massage technique is used as an intervention to reduce blood pressure in pregnant women with pre-eclampsia. Physically, a foot massage will have an impact on the relaxed muscles, relieve pain and congestion by releasing lactic acid, increasing blood and lymph flow, and stretching joints. Foot also releases body toxins and stimulates the immune system and will ease anxiety and provide a sense of relaxation.

Preeclampsia can be treated pharmacologically and non-pharmacologically. Pharmacological treatment in preeclampsia certainly contains chemicals that can cause side effects, while non-pharmacological treatments are natural treatments including herbal therapy, nutritional therapy, aromatherapy, reflexology massage, and foot bath therapy with warm water (Damayanti, 2014). Footbath with warm water is one of the natural therapies that aim to increase blood circulation, reduce edema, increase muscle relaxation, nourish the heart, relax muscles, relieve stress, increase capillary permeability, so it is very beneficial for blood pressure reduction therapy in pregnant women preeclampsia sufferer. The steps are as follows: the client sits on a chair with a relaxed and leaning, then pour warm water in a bucket/basin to a temperature of 37o-39 of about 2 liters, soak feet to the wrist limit into the bucket/basin for 15-20 minutes, after that remove both legs, rinse with cold water, then dry the feet using a towel. To keep feet smooth and not dry, apply a soft cream (body lotion) (Lalage, 2015). Soaking feet with warm water has many benefits for the body, especially in accelerating blood circulation which has a physical effect of heat/warmth which

causes liquid, solid, and gas to expand in all directions. Also, the body's response will result in decreased blood viscosity, reduced muscle tension, increased tissue metabolism, and increased permeability.

In addition to foot baths, there are also non-pharmacological techniques for treating hypertension. One of them is dry cupping as an option to reduce blood pressure. The mechanism of action of dry cupping will stimulate the secretion of endogenous opioids, beta-endorphins to blood vessels, and brain fluid. These endorphins work directly on the central nervous system and spinal cord as neurotransmitters, which will cause analgesic effects. Dry cupping therapy also works to flex the muscles, especially in the back area. When removing the cupping glass there is an increase in blood flow to the skin (hyperemia reaction), resulting in the microcirculation of blood vessels that can cause a relaxing effect on the muscles that can cause a decrease in blood pressure. According to Kartini, Fratidhina, and Kurniyati (2017) healing preeclampsia mothers by using the method of listening to the reading of the Qur'an (murottal), murottal Qur'an techniques can provide a calming and relaxing effect because it will provide a positive perception response that can stimulate the hypothalamus to release hormones endorphins are hormones that make a person feel happy so that they can lower blood pressure.

Hypnotherapy or Hypnosis is a psychological technique that brings a person in a state of relaxation is accompanied by elements of saving motion and relaxation, reduction of muscle activity and energy expenditure, hypnosis therapy performed on patients is beneficial in increasing the ability to produce anesthesia in every part of the body, improve sleep problems, coping, controlling pain symptoms, and so on. Hypnosis can also control several organic functions such as bleeding, heart rate, blood pressure.

In addition to massage and soaking therapy, some drinks are recommended for lowering blood pressure in pregnant women with preeclampsia. Carrots can reduce blood pressure because they have potassium content. Potassium is a good mineral content to reduce or control tension and is a strong diuretic so that it helps maintain water balance, blood

pressure, acid-base balance, expedite urine release, help dissolve stones in the urinary tract, bladder, and kidneys (Junaidi, 2010). Potassium also has a function as vasodilation in blood vessels. Vasodilation in blood vessels can decrease peripheral health and increase cardiac output so that blood pressure can be normal. Potassium can also inhibit the release of renin so that it changes the activity of the renin-angiotensin system and potassium is also able to affect the peripheral and central nervous system which affects blood pressure so that blood pressure can be controlled (Wibowo, 2010).

Chayote contains a variety of nutrients and anti-inflammatory properties so it can treat high blood pressure. The content in chayote has a diuretic effect thereby reducing salt levels in the blood through urine excretion. With reduced levels of salt that absorbs or holds water will ease the heart's work in pumping blood so that blood pressure will decrease. For the processing of the first pumpkin, the pumpkin is peeled, washed clean, and then in a fresh state in a blender with a dose of conjoined pumpkin juice made from 500 grams of pumpkin, 100 ml of boiled water, and 100 grams of granulated sugar. Chayote is also a cholesterol-lowering vegetable, preventing hypertension, as a source of nutrition for pregnant and lactating women, both for gout sufferers, diabetics, and thrush sufferers, as well as maintaining kidney health, these vegetables are easily available and inexpensive on the market.

Ginger has benefits in the cardiovascular system which increases the flow of body fluids by stimulating blood circulation throughout the body. Increased blood circulation can stimulate increased cell metabolism so that it can reduce cramps, ginger has antioxidant effects. Besides, ginger also reduces the formation of prostaglandin-E2 and thromboxane so that it can reduce the risk of blood clots and can also reduce blood pressure through the blockade of voltage-dependent calcium channels. Provision of ginger water made from 4 grams of powdered ginger and then mixed with 200 ml warm water in one drink (Anthony, 2008) given every morning for two weeks.

And the article "The Effect of Starfruit Leaf Decoction in Lowering Blood Pressure

of Pregnant Women with Preeclampsia" This is because starfruit leaves contain potassium citrate which functions to excrete urine, lowers high blood pressure, in addition to the chemical compound p-nitromethyl phenyl benzenesulfonate, ethyl ester acetic acid, propyl ester of acetic acid, butyl ethyl ether, methylbenzene, and diethyl ester of 1,2-benzenecarboxylic acid are known to lower blood pressure. The problem that occurs in this patient is damage to the narrowed arteries and causes an increase in peripheral resistance and also an increase in blood pressure.

Conclusion

These treatments are those obtained article used, such as, Hypnotherapy, consuming food (carrot juice, chayote, ginger juice, and starfruit water), foot massage, foot baths with warm water, cupping therapy, SEFT therapy, and mural hearing. all journals can reduce blood pressure, but the journal does not explain the mechanism of reducing blood pressure based on the intervention used. better to elaborate more as the way to conclude this literature review

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