

Complementary and alternatives care for postpartum preeclampsia: A scoping review

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Abstract

This scoping review aimed to examine the existing evidence on complementary and alternative medicine interventions for pre-eclampsia, emphasizing empowering midwives in postpartum treatment. Three databases (PubMed, Web of Science, Scopus) were used following the PRISMA-2020 guidelines to find articles from January 2012 to December 2022 and synthesized using Rayyan AI software. A total of 707 articles were initially identified, 7 were included in the review. Traditional Chinese Medicine combined with Western medicine showed promise in treating severe preeclampsia. Massage therapy reduced anxiety, aromatherapy positively affected postpartum well-being, and warm foot therapy reduced swelling associated with postpartum preeclampsia. Using herbal ingredients, lavender aromatherapy, magnesium sulfate, massage, and physical therapy contributed to successful postpartum preeclampsia management. Complementary and alternative medicine, collaboration with community health workers, clear guidelines, targeted training, and future research are crucial for effective postpartum preeclampsia management.

Keywords

complementary, alternative care, postpartum, preeclampsia

Introduction

Preeclampsia, often known as PE, is one of the most common causes of sickness, disability, and mortality among pregnant women and their newborns (Say et al. 2014). The combined causes of mortality from preeclampsia and eclampsia accounted for 14% of all deaths globally (Say et al. 2014). According to the World Health Organization's (WHO) estimates, the risk of developing preeclampsia is seven times greater in underdeveloped nations than it is in wealthy countries (Belay and Wudad 2019). In underdeveloped nations, the percentage of pregnant women who develop preeclampsia ranges from 1.8 to 16.7%

(Lakew et al. 2013; Belay and Wudad 2019). Preeclampsia was found to have a prevalence of between 0.2 and 6.7% in Asia, between 0.5 and 2.3% in Africa, between 2.8 and 5.2% in Europe, between 2.8 and 9.2% in Oceania, between 1.8 and 7.7% in South America and the Caribbean, and between 2.6 and 4.0% in North America, according to a review that covered larger data sets (Umesawa and Kobashi 2017). Preeclampsia was found to be prevalent in 2.07% of pregnant women in China, 1.19% of pregnant women in Japan, 2.22% of pregnant women in Thailand, and 0.59% of pregnant women in Nepal, according to another assessment that summed up the data for the Asian areas (Abalos et al. 2014). Hypertension, often known as

preeclampsia, is a condition that typically manifests itself after 20 weeks of gestation in conjunction with proteinuria. Preeclampsia is diagnosed in conjunction with liver failure, thrombocytopenia, pulmonary oedema, newly developed renal dysfunction, or newly developed cerebral or visual abnormalities when proteinuria is not present (ACOG Committee on Obstetric Practice 2020). It is possible for women and newborns to suffer severe morbidity, persistent impairment, and even death as a result of this condition. If not handled properly, preeclampsia can impede the passage of appropriate blood and oxygen to the growing fetus, cause damage to the woman's liver and kidneys, and can proceed to eclampsia, a catastrophic illness characterized by convulsions (Wallis et al. 2008; Akter and Khanum 2021).

During the past decade, doctors have been increasingly pushed to utilize medications "off-label" in an effort to determine whether or not they are effective against PE (Rolnik et al. 2017). Although acetylsalicylic acid (ASA) is often used prophylactically in women at high risk of preeclampsia, there are presently no pharmaceutical therapies available to treat preeclampsia (Askie et al. 2007). Pregnant women have access to a wide variety of modalities through complementary health techniques that aim to improve, restore, and sustain their health and well-being (Sharma and Branscum 2015). They utilize these treatments often over their whole age range (Steel et al. 2018). In certain situations, people believe that non-pharmacological solutions are more acceptable than pharmaceutical ones due to worries about the potential for adverse effects and their impact on the developing baby (Frawley et al. 2016). It has been shown that there is a positive correlation between using complementary health treatments and a decrease in cardiovascular disease risk factors (Hartley et al. 2014a, 2014b).

Implementation of complementary and alternative medicine for preeclampsia requires professional health care providers. When it comes to the management of pregnancy and the process of giving birth, midwives are the primary caregivers (Dartey et al. 2022). Midwives who have received the appropriate training and possess the necessary knowledge and skills have a greater chance of recognizing early warning signals and recommending that their patients receive quick treatment, which may include complementary and alternative medicine. Midwives working in metropolitan healthcare institutions have access to more advanced medical technology, such as digital monitors and delivery suites, and they collaborate with other medical professionals to address any issues that may arise during pregnancy (Dartey et al. 2022).

This review comprehensively examines the pathophysiology of PE with a specific focus on the mechanisms underlying the clinical features, the role of midwife and community health workers responsibility on postpartum women, pharmacological therapy for PE, complementary and alternative care for PE, the postpartum physiology changes, and the current implementation of complementary and alternative care for postpartum PE.

Methods

Study design

A systematic literature search was conducted, and articles published between January 2012, to December 2022 were included in this scoping review. This scoping review was reported according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines used to guide this review (Page et al. 2021). The PICOS items, i.e., population, intervention, comparator, outcomes, and study design following the previous scoping review (Kusuma et al. 2022). All curated studies were then imported into Zotero software to identify and remove duplicate records.

Search strategy

Three databases (PubMed, Scopus, and Web of Science (WoS)) were searched for articles containing the keywords "preeclampsia" AND "complementary treatment," and the results were compiled. Articles written in languages other than English and abstracts that were never expanded upon were not considered.

Eligibility criteria

Studies documenting the application of complementary and alternative care for postpartum PE were included. The inclusion criteria such as case study, randomized clinical trial, preeclampsia, post natal preeclampsia, and conference proceeding. On the other hand, review study, animal study, commentary, editorials, books, newspaper, non-open access, non English article were excluded.

Study selection

Four independent reviewers (SR, ST, TRA, and SM) screened the titles and abstracts of all identified articles for eligibility using the predefined inclusion and exclusion criteria using Rayyan AI software (Ouzzani et al. 2016). The data extraction screening included information on study design, participant characteristics, intervention details, outcomes, and limitations. Any disagreements were resolved through discussion and consensus. The full text of potentially eligible articles was then reviewed by the same four reviewers (SR, ST, TRA, and SM) using the same criteria. A third round of screening was also conducted to identify additional studies that met the inclusion criteria based on the full text review of the reference lists. Two reviewers (SR and TRA) separately extracted data, then cross-checked and compiled it by SR. The synthesis involved a descriptive summary of the study characteristics and a thematic analysis of the reported outcomes in Microsoft Office Excel 2019 using a standardized template. The data included the author, year, country, title, study design, population/participants, intervention, duration of intervention, durations of intervention, participants and outcome provided (see Table 1).

Table 1. Complementary and Alternative Medication (CAM) Care for Preeclampsia Treatment.

No	Author	Year	Country	Title	Intervention	Duration of intervention	Participants	Outcome
1	Awad et al. 2019	2019	Egypt	Effect of stretching exercises versus autogenic training on preeclampsia	They were split up into two groups with an equal number of members in each; Group A: 20 women (stretching exercises) Group A: 20 women subjects who underwent relaxation training in the form of autogenic training (AT) Groups A + B: 3 treatments each week for 6 weeks + methyl/dopa.	6 weeks	40 preeclamptic primiparous women	Significant decrease in systolic blood pressure, diastolic blood pressure and proteinuria in both group A and B after 6 weeks of treatment Group A (Decrease): Systolic: 13.75%, Diastolic: 12.88%, Proteinuria: 19.50% Group B (Decrease): Systolic: 12.98%, Diastolic: 13.20%, Proteinuria: 17.17%
2	Wang et al. 2021	2021	China	Clinical Effects of Integrated Traditional Chinese and Western Medicine in Treating Severe Preeclampsia and Its Influence on Maternal and Infant Outcomes after Cesarean Section under Combined Lumbar and Epidural Anesthesia	83 patients experimental group: self-made TCM decoction for oral administration (uncariae ramulus cum unciis (15 g), Salvia miltiorrhiza (15 g), Astragalus propinquus (15 g), puerariae lobatae radix (15 g), eucommiae cortex (12 g), leonuri herba (12 g), ginseng radix et aesare (10 g), paconiae radix alba (10 g), poria (10 g), dioscoreae aesare (10 g), 5 g of angelicae sinensis radix, and 3 g of glycyrrhizae radix et aesare.) 83 patient control group: conventional treatments (magnesium sulfate injection)	24 hours	166 women with severe preeclampsia (SPE)	The combination of traditional Chinese and Western medicine can reduce the blood pressure of a patient with SPE. After the combined spinal-epidural anesthesia and cesarean section, it can significantly improve the maternal and infant outcomes and renal function, reduce inflammatory factors levels and body oxidative stress, and increase the activities of antioxidant enzymes. The total clinical effective rate of treatment in the experimental group was 90.36% and in the control group was 71.08%
3	Gardiner et al. 2013	2013	USA	Herb Use, Vitamin Use, and Diet in Low Income Postpartum Women	Women using herbs were significantly more likely to graduate high school (92% vs 78%, P=0.07) than non-herb users (65% vs 53%, P=0.03). Herb users were significantly more likely to report making any dietary change during their pregnancy than non-herb users (P=0.03), with 33% increasing their dairy intake and 51% eating more fruits. 58% reported making some other dietary changes, such as reducing salt intake (n=6), reducing caffeinated beverages and drinking more water (n=14), or eating less junk food (n=6). The most common herbal products women reported using during pregnancy were ginger (14%, n=22) and peppermint (14%, n=22).	24 months	160 prenatal women	Women with lower income are more likely to use herbal medicine for treatment. However, the use of herbs is rarely documented in inpatient medical records. From 160 participants, only 125 had documented use of prenatal vitamins and none had documented use of herbal medicine.
4	Jahdi et al. 2016	2016	Iran	The Effect of Slow-Stroke Back Massage on the Anxiety Levels of Iranian Women on the First Postpartum Day	100 participants which were primiparous women as signed to a massage therapy group (n = 50) or a control group (n = 50).	4–18 hour	100 primiparous woman	About 46% of the women had a secondary education, and 94% were homemakers. This represents a higher improvement of the anxiety in the intervention group than the control group after the intervention. A slow-stroke back massage in the first few days after delivery reduce maternal anxiety levels
5	Kianpour et al. 2016	2016	Iran	Effect of lavender scent inhalation on prevention of stress, anxiety and depression in the postpartum period	The women divided into two groups. Group 1 (women with aromatherapy) Group 2 (non aromatherapy) The control group received routine care after discharge and was followed up by telephone only.	8 hours	140 women treated in the obstetrics and gynecology department	The study showed that using lavender and rose essential oils reduced anxiety and depression in students living in a hostel. Aromatherapy also led to a decrease in cortisol and an increase in serotonin levels, and improved the physical and psychological well-being of both women and infants after delivery, as well as promoting maternal-infant interaction.
6	Zainiyah et al. 2019	2019	Indonesia	The Effect of Warm Footbath with Salt of Edema Under Extremity in Postpartum Pre Eclamsia	Quasi-experimental pre-post test with control group design. The independent variable was soaking the foot using mixed salt warm water mixed. The dependent variable was extremity edema in the postpartum woman preeclampsia. The population was 9 respondents. Samples taken were 9 respondents	15 minutes morning and evening for 3 days	The population was 9 respondents. Samples taken were 9 respondents	Soaking feet in warm salt water can reduce swelling in the legs, particularly in postpartum women with preeclampsia. This is because the warm salt water helps to dilate blood vessels and improve blood flow, reducing swelling. Midwives should encourage postpartum women experiencing leg swelling to try this method.
7	Nikmah and Machmudah 2019	2019	Indonesia	MgSO4 And Slow Stroke Back Massage (SSBM) Therapy on Blood Pressure of Severe Preeclampsia Pregnant Women	Quasi-experimental design with the pre and post test perspective. This research measured 32 the pregnant women with severe preeclampsia		32 respondents	The study found that combining MgSO4 therapy +SSBM significantly reduced blood pressure in severely preeclampsia pregnant women. The systolic blood pressure dropped from 168.63 to 151.94 with MgSO4 therapy and from 153.75 to 141.87 with the combination (MgSO4+SSBM). Similarly, diastolic blood pressure decreased from 104.44 to 94.81 with MgSO4 therapy and from 91.88 to 87.00 with combination (MgSO4+SSBM) therapy.

Results

Fig. 1 illustrated the flow chart diagram of the scoping review about complementary and alternative care for postpartum PE. A total 707 articles were compiled from three databases, i.e., 100 from PubMed, 598 from Scopus, and 9 from the WoS. Fifteenth study recorded as duplication, thus after removing duplicates, 693 articles were assessed based on established inclusion and exclusion criteria. At least four reviewer compared abstracts and titles. A total of 677 articles were excluded from the review that did not meet the established criteria, i.e., Wrong Population (n=147), Wrong Study Design (n=341), Wrong Publication Type (n=26), Wrong outcome (n=163). Eventually, we discovered a total of 15 papers. Four researchers reviewed and compared a subset of the publications and then organized them topically. Afterwards, those 15 articles were subjected to a second screening performed through a face-to-face discussion and full-text analysis. After second screening, we excluded 8 articles that did not meet the established criteria not specific intervention (n=5) and not open access (n=3). Finally, 7 studies were included (Gardiner et al. 2013; Jahdi et al. 2016; Kianpour et al. 2016; Awad et al. 2019; Nikmah and Machmudah 2019; Zainiyah et al. 2019; Wang et al. 2021). In summary, the scoping review identified 7 studies that met the inclusion criteria, providing valuable insights into the potential of Complementary and Alternative Medicine (CAM) application for postpartum PE. These findings can inform further research and practice in this area.

CAM care for postpartum preeclampsia

Seven papers were located that addressed the use of non-conventional treatments for preeclampsia, some of which might be used in the postpartum period as well. In light of Egypt (Awad et al. 2019), China (Wang et al. 2021), United States of America (Gardiner et al. 2013), Iran (Jahdi et al. 2016; Kianpour et al. 2016) and Indonesia (Nikmah and Machmudah 2019; Zainiyah et al. 2019), in the treatment of preeclampsia following delivery, each of these options varies in certain ways while also sharing some commonalities (see Table 1).

Discussion

Complementary and Alternative Care (CAM) type for PE

Evidence suggests that a model for ensuring the continued use of newly acquired skills can be found in the results of a study conducted in Brazil by Lima et al. 2018, which examined the impact of an action-oriented educational intervention on the knowledge, attitudes, and practices (KAP) of community health workers (CHWs) in maternal and infant health (Lima et al. 2018). The intervention group participated in a 4-day interactive training course (Pallivalappila et

al. 2013). Studies have shown that women are more likely to see massage therapists (34.1%), chiropractors (16.3%), and yoga/meditation courses (13.6%) than acupuncturists (9.5%), naturopaths/herbalists (7.2%), or osteopaths (6.2%) (Steel et al. 2012). The following studies are examples of complementary treatments that have been demonstrated to be utilized to enhance the care that is provided to postpartum women who are diagnosed with preeclampsia:

Traditional Chinese Medicine (TCM)

Traditional Chinese Medicine (TCM) is gaining popularity among pregnant women in Taiwan as a method of therapy for issues such as pregnancy-induced hypertension and morning sickness. TCM was developed in China. It is still not entirely understood whether or not preeclampsia may be effectively treated with traditional Chinese medicine (Rasouli et al. 2019). A study by Wang found that treating severe preeclampsia with a combination of Traditional Chinese Medicine (TCM) and Western medicine is more effective than using Western medicine alone. The treatment improved the levels of antioxidants in the body (SOD: superoxide dismutase; GSH-Px: Glutathione peroxidase), reduced oxidative stress injury (MDA: malondialdehyde; LPO: lipid peroxides; AOPP: advanced oxidation protein products), decrease blood pressure, IL-6 (interleukin-6), TNF- α (tumor necrosis factor- α), CRP (C-reactive protein), and Hcy (homocysteine) levels. According to the findings, using a combination strategy like this to treat severe preeclampsia appears to have a beneficial effect on the outcomes for both the mother and the baby (Wang et al. 2017). As a result, the utilization of this treatment approach has the potential to lessen the number of unfavorable pregnancy outcomes that occur following a cesarean section that is performed under combined lumbar and epidural anesthesia (Wang et al. 2021).

Massage therapy

The term “massage therapy” (often abbreviated as “MT”) refers to the systematic and intentional manipulation of soft tissue for therapeutic reasons (Ooi et al. 2018). Researchers Jahdi and colleagues found that nulliparous women experienced less anxiety on the first postpartum day after receiving a slow-stroke back massage. This intervention was shown to be effective, simple, affordable, and noninvasive. As all pregnant women in Sabzevar are sent to the one obstetric and gynecologic center (the Mobini hospital), the results may be generalized to all women in the city (Jahdi et al. 2016).

Aromatherapy

Aromatherapy is one of the CAM (complementary and alternative medicine) subfields that is experiencing the most rapid expansion. “the therapeutic use of scents or at least of simple volatiles to treat or to ameliorate or to prevent sickness, infections, and indispositions exclusively

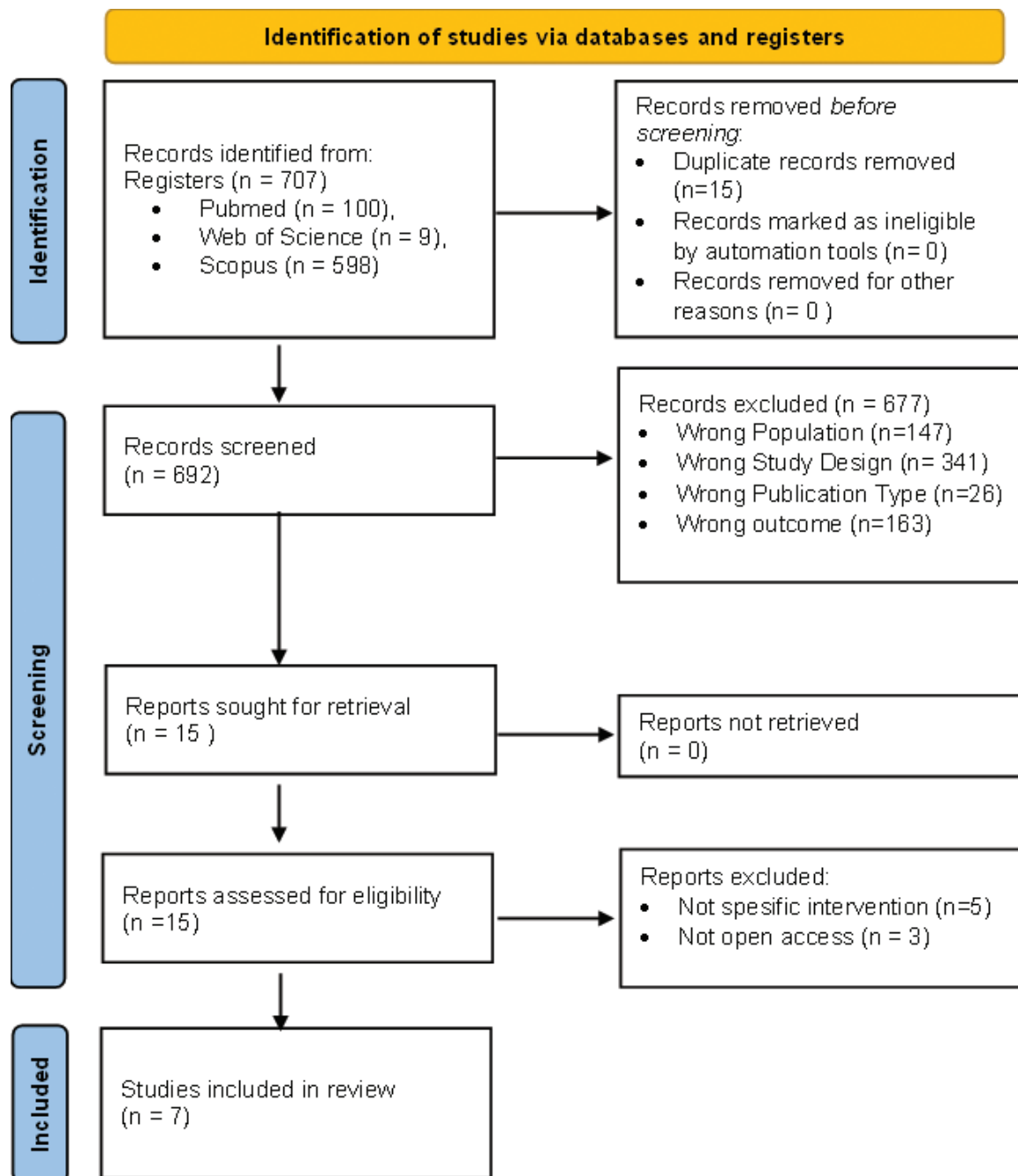


Figure 1. Flowchart diagram of Scoping Review about CAM for PE Postpartum.

by means of inhalation” is one definition of aromatherapy (Yelfi et al. 2019). Nipple fissures, episiotomy, cesarean section birth, sleep, mood, tension, anxiety, distress, and depression were all positively affected by aromatherapy, as reported in a systematic study conducted by Shuo-Shin (Shuo-Shin et al. 2020).

Warm foot therapy

Soaking the feet (foot hydrotherapy) in warm salt water for 15 minutes twice a day for three days has been shown to reduce swelling in postpartum preeclampsia. As a form of detoxification, this treatment helps the body eliminate

toxins by increasing blood flow and oxygen delivery to the swollen tissue through the dilation of blood vessels (Sulfianti et al. 2021). Because of the physiological effects of warm water, this treatment was proven to be successful in lowering edema in pregnant women by Zainiyah et al. 2019, warm water enhances tissue metabolism and permeability and lessens muscular tension by relaxing the muscles and dilating blood vessels. Blood will pool in the heart’s arteries due to the hydrostatic pressure of water, which causes the veins and arteries to swell from the legs to the chest. Preeclampsia patients may find warm foot therapy to be a practical choice because of its ease of use, low cost, and lack of risk (Zainiyah et al. 2019).

Current implementation of CAM care for postpartum PE

After birth, the mother's body goes back to its pre-pregnancy state physiologically and anatomically. The postpartum period, sometimes called the puerperium, extends from the time of placental evacuation until the time when all of the newborn's physiological systems have fully recovered (Brown et al. 1999; Romano et al. 2010). Within the first 24 hours, the body temperature returns to normal, albeit it may rise to as high as 37.2 °C (99 °F) and cause increased shivering, sweating, or diaphoresis (Bystrova et al. 2007; Benson et al. 2008). The accumulation of metabolites from muscular contractions is what causes the temperature to rise when they are absorbed into the circulatory system. On the third or fourth day, breast engorgement may cause a temporary temperature increase (by 0.5 °C). Throughout the first few days after giving birth, the breathing rate also starts to return to its normal, lower, pre-pregnancy level. A third-day or greater fever increase is indicative of infection (Alekseev et al. 2015; Woodd et al. 2019; Boushra and Rahman 2020). Expulsion of the placenta and the resulting blood loss causes a loss of between 5 and 6 kg of weight. The rapid diuresis also contributed to the additional 2–3 kg of weight loss. Diuresis-induced weight loss can last for up to six months after giving birth (Lambri-nou et al. 2019). Involution also refers to other alterations in postpartum physiology. Reproductive organs undergo a process called involution in which they revert to their condition before to conception. The placenta and uterus quickly contract after birth to stop any more bleeding (Ucci et al. 2021).

Colostrum is an early form of breast milk that mothers produce in greater quantities in the postoperative period (Silberstein et al. 2019). It varies from woman to woman whether or not she is nursing when her first period begins after giving birth. Menstruation often resumes between the sixth and eighth week postpartum if the woman is not nursing (Crowley 2017). There may be little urgency to urinate, leading to swelling and hyperemia of the bladder wall and possible overdistention (Chauhan and Tadi 2020). It is estimated that between six and eight liters of total body water are transferred from the extravascular region to the intravascular region. The continuous stimulation of the renin-angiotensin-aldosterone system (RAAS) that occurs during pregnancy results in an increase of 950 mEq in the amount of sodium that is found in the body (Ogueh et al. 2011; Reddy and Jim 2019). Moreover, the woman may experience hemorrhoids, laxity of the abdominal wall, and loss of bodily fluids (Shin et al. 2015). About nine in ten pregnant women have some degree of hyperpigmentation (Bieber et al. 2017).

Women with preexisting hypertensive diseases are more likely to experience postpartum hypertension, however hypertension can also arise in this population (Hoyert and Miniño 2020). Women who develop hypertension for the first time between 48 hours and 6 weeks after giving birth may have postpartum preeclampsia, a diagnosis that may or may not be made, depending on the terminology used. There are few evidence-based guidelines for the diagnosis and therapy of new-onset postpartum preeclampsia

due to a lack of research into this disease type (Sibai 2012; Hauspurg and Jeyabalan 2022) preeclampsia, or preexisting chronic hypertension, or it could develop de novo postpartum secondary to other causes. There are limited data describing the etiology, differential diagnosis, and management of postpartum hypertension-preeclampsia. The differential diagnosis is extensive, and varies from benign (mild gestational or essential hypertension. We did, however, identify postpartum preeclampsia with a delayed start. Neurologic symptoms, most often headache, are the first to be seen in the majority of women with delayed-onset postpartum preeclampsia within the first 7–10 days following birth (Sibai 2012; Hauspurg and Jeyabalan 2022) preeclampsia, or preexisting chronic hypertension, or it could develop de novo postpartum secondary to other causes. There are limited data describing the etiology, differential diagnosis, and management of postpartum hypertension-preeclampsia. The differential diagnosis is extensive, and varies from benign (mild gestational or essential hypertension. Despite the fact that postpartum preeclampsia is associated with a greater risk of maternal morbidity than preeclampsia with antepartum start, it is still a poorly understood disease process (Hauspurg and Jeyabalan 2022).

The results depict that herbal ingredients are effective in treating preeclampsia after childbirth (Gardiner et al. 2013; Wang et al. 2021). Wang et al. 2021, provided a more in-depth analysis of the variance between the experimental and control groups' overall clinical successful rates of therapy utilizing herbal medicine, which were 90.36 and 71.08%, respectively (Wang et al. 2021). Iranian researchers Kianpour et al. 2016, found that preeclampsia risk factors such as maternal stress, anxiety, and postpartum depression can be mitigated by the use of lavender aromatherapy. Based on the results of the study, aromatherapy with lavender can help reduce anxiety during delivery by decreasing cortisol levels and raising serotonin release (Kianpour et al. 2016).

Reduce edema in the legs by soaking your feet in warm water with salt for 15 minutes each morning and night for three days. This is especially helpful for postpartum mothers who have developed preeclampsia. The average measurement of edema before and after the intervention was 16.33 and 12.27, respectively, demonstrating that this approach increases blood flow and lowers swelling (Zainiyah et al. 2019). Nikmah and Machmudah conducted a research on the effects of magnesium sulfate (MgSO₄) treatment and slow-stroke back massage (SSBM) on the blood pressure of women with severe preeclampsia. Systolic and diastolic blood pressure were both shown to fall following therapy in this research. Before and after treatment with MgSO₄ and MgSO₄+SSBM, the systolic blood pressure readings were 168.63 mm Hg and 153.75 mm Hg, and 151.94 mm Hg and 141.87 mm Hg, respectively. Before and after treatment with MgSO₄ and MgSO₄+SSBM, diastolic blood pressure was 104.44 mm Hg and 91.88 mm Hg, and 94.81 mm Hg and 87.00 mm Hg, respectively (Nikmah and Machmudah 2019).

Physical therapy, including stretching exercises, autogenic training, and slow-stroke back massage, has been shown to lower blood pressure in postpartum women in

studies conducted by Awad in Egypt and Jahdi in Iran (Jahdi et al. 2016; Awad et al. 2019). Group A consisted of 20 women who did stretching exercises, while Group B consisted of 20 women who did autogenic training for relaxing (AT). Systolic blood pressure was 13.75% lower in group B compared to group A, and diastolic blood pressure was 12.88% lower compared to group B, and proteinuria was 19.50% higher in group B compared to group A 17% higher in group A (Awad et al. 2019). While exercise boosts parasympathetic activity, which in turn causes bradycardia, it has the potential to significantly reduce preeclampsia risk by reducing both blood pressure and resting heart rate (Carter et al. 2003). The relaxation response counteracts the effects of sympathetic activity by bolstering the parasympathetic nervous system's ability to regulate blood pressure. Reduced sympathetic activity causes a drop in blood pressure via decreasing plasma renin-angiotensin activity and aldosterone concentration (Broms, 1999).

This study has several limitations that need to be considered. Firstly, there is a limited number of studies specifically focusing on CAM interventions for postpartum preeclampsia, necessitating the inclusion of studies on pre-eclampsia that may not directly apply to the postpartum period. Secondly, the variability in study designs, outcome measures, and participant characteristics adds complexity to drawing definitive conclusions. Additionally, the lack of standardized protocols and guidelines for CAM interventions in postpartum preeclampsia hampers consistent evaluation and comparison. Furthermore, the potential for publication bias and variations in the quality of included studies impact the overall strength of the evidence. Future research should address these limitations and prioritize targeted studies on CAM interventions specifically for postpartum preeclampsia to enhance the evidence base and inform clinical practice.

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Conclusion

Our findings suggest midwives play a crucial role in providing comprehensive care for women during pregnancy, labor, and the postpartum period, including those with preeclampsia. They should possess the skills to promptly assess the situation and initiate appropriate therapies. Integrating complementary and alternative medicine approaches such as stretching exercises, autogenic training, herbal medication, lavender aromatherapy, slow-stroke back massage, dietary control, yoga, and warm foot therapy. Furthermore, herbal ingredients can promote blood circulation, improve the metabolic products in the blood of patients with hypertension and restore normal body function, nourish blood for regulating menstruation, regulate the metabolism of water and salt in the body, remove stasis, and calming. All of treatment can optimize the management of postpartum preeclampsia under the guidance of midwives. Collaboration with community health workers can enhance the provision of care. Clear guidelines and extensive training are essential for improving care for patients with preeclampsia. Future research should focus on implementing the knowledge gained thus far into targeted modules for the application of complementary and alternative medicine in postpartum preeclampsia therapy.

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