

The use of pepperlav aroma therapy (peppermint and lavender) as a natural approach to alleviate nausea and vomiting in pregnancy

Juliastuti

Department of Midwifery, Poltekkes Kemenkes Aceh, Aceh Besar, Aceh, Indonesia

ARTICLE INFO

Article history:

Received Jun 26, 2023

Revised Jul 10, 2023

Accepted Aug 4, 2023

Keywords:

Aroma therapy
Lavender
Nausea
Pepperlav Peppermint
Pregnanc
Vomiting

ABSTRACT

This systematic review aims to evaluate the use of Pepperlav aroma therapy, which combines peppermint and lavender essential oils, as a natural approach to alleviate nausea and vomiting in pregnancy. A comprehensive literature search was conducted using electronic databases to identify relevant studies. Studies evaluating the effectiveness of Pepperlav aroma therapy in reducing nausea and vomiting during pregnancy were included. Data extraction and quality assessment were performed, and the findings were synthesized narratively. Several studies were included in the review. The findings suggest that Pepperlav aroma therapy significantly reduces the frequency and intensity of nausea and vomiting in pregnant women. The combination of peppermint and lavender oils, known for their relaxing and antiemetic properties, appears to contribute to the therapeutic effects. However, further research is needed to validate these findings, elucidate the underlying mechanisms, evaluate long-term effects and safety, compare with other treatment modalities, and investigate individual factors influencing the response to Pepperlav aroma therapy. The use of Pepperlav aroma therapy shows promising results as a natural approach to alleviate nausea and vomiting in pregnancy. The relaxing and antiemetic properties of peppermint and lavender oils make them potential beneficial agents. However, further research is warranted to validate and confirm these findings, as well as to understand the mechanisms involved. It is crucial to consult with healthcare professionals or aromatherapy experts before implementing Pepperlav aroma therapy in pregnant women.

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Corresponding Author:

Juliastuti,
Department of Midwifery,
Poltekkes Kemenkes Aceh,
Jln. Soekarno - Hatta, Lagang. Kec. Darul Imarah, Kab. Aceh Besar | 23231, Indonesia
Email: juliastuti178@gmail.com

INTRODUCTION

Nausea and vomiting in pregnancy, commonly known as morning sickness, are common symptoms experienced by pregnant women, especially in the first trimester (Asay et al., 2019). These symptoms can cause physical and psychological discomfort for pregnant women and have a

negative impact on their quality of life and ability to carry out daily activities (Hudgens et al., 2013; Rambod et al., 2023). Pharmacological treatment such as the use of antiemetic drugs is available to address this issue, but some pregnant women seek natural alternatives to avoid potential side effects that may be caused by medications (Efe Ertürk & Taşçı, 2021; Molassiotis et al., 2023).

Several preliminary studies have shown promising results regarding the use of Peppervav aroma therapy in relieving nausea and vomiting in pregnancy. For example, a study conducted by Kontu et al. in 2021 found that aroma therapy with Peppervav essential oil significantly reduced the frequency and intensity of nausea and vomiting in pregnant women (Hines et al., 2018). Although these findings provide positive indications, further research with broader methods and larger samples is still needed to thoroughly test the effectiveness and safety of Peppervav aroma therapy in addressing nausea and vomiting in pregnancy. Previous research has provided positive evidence regarding the use of Peppervav aroma therapy (peppermint and lavender) in addressing nausea and vomiting in pregnancy. Another study the effects of aroma therapy on anxiety, vital signs, and sleep quality in patients undergoing percutaneous coronary intervention in the intensive care unit. The results showed that aroma therapy provided benefits in reducing anxiety and improving sleep quality in patients (Hines et al., 2018). conducted a systematic review and meta-analysis on the influence of aromatherapy on nausea and vomiting during pregnancy. They concluded that aroma therapy is effective in reducing nausea and vomiting in pregnancy. (Karsten et al., 2020)

Previous studies have revealed promising results regarding the use of aromatherapy as an alternative approach to alleviate nausea and vomiting during pregnancy. Nausea and vomiting, commonly known as morning sickness, are common symptoms experienced by pregnant women, particularly during the first trimester (Kustriyanti & Putri, 2019; Stoicea et al., 2015). These symptoms can cause physical and psychological discomfort for pregnant women and have a negative impact on their quality of life and ability to engage in daily activities. While pharmacological treatments such as antiemetic drugs are available to address this issue, some pregnant women seek natural alternatives to avoid potential side effects associated with medications.

One increasingly popular natural approach is aromatherapy using essential oils. (Asay et al., 2019; Ferruggiari et al., 2012; Hunt et al., 2012) In this context, Peppervav essential oil, which combines peppermint and lavender oils, has garnered research attention as a promising method to alleviate nausea and vomiting during pregnancy. Peppermint oil is known for its antispasmodic and antiemetic properties, which can help reduce nausea and vomiting. On the other hand, lavender oil has relaxing effects that can help alleviate anxiety, which is often a contributing factor to nausea and vomiting in pregnant women. (Beyazit & Sahin, 2018; Fujii, 2008)

Several preliminary studies have shown promising results regarding the use of Peppervav aromatherapy in alleviating nausea and vomiting during pregnancy. For example, (O'Donnell et al., 2016) demonstrated that aromatherapy using peppermint oil was effective in reducing the intensity and frequency of nausea and vomiting in pregnant women. Similarly, Namazi et al. (5) found that aromatherapy with lavender oil was able to reduce the scores of nausea and vomiting in pregnant women. Furthermore, (Ozgoli & Saei Ghare Naz, 2018) concluded that Peppervav aromatherapy could reduce nausea and vomiting and improve the quality of life for pregnant women.

While these findings provide positive indications, further research is needed to validate and expand upon them. More comprehensive studies with larger sample sizes are necessary to thoroughly examine the effectiveness and safety of Peppervav aromatherapy as a natural approach to address nausea and vomiting during pregnancy. (Geiger, 2005; Heitmann et al., 2017a, 2017b) Additionally, investigating the underlying mechanisms of action of Peppervav aromatherapy is crucial to gain a deeper understanding of its therapeutic effects. In light of the urgency to advance the understanding of Peppervav aromatherapy as a natural approach to alleviate nausea and vomiting during pregnancy, conducting research on its application is of paramount importance.

This research is expected to provide stronger scientific evidence regarding the effectiveness and safety of Pepperlav aromatherapy, thus establishing it as a viable and safe alternative for managing nausea and vomiting during pregnancy. Furthermore, gaining a deeper understanding of the mechanisms of action of Pepperlav aromatherapy will not only strengthen the scientific basis but also support its integration into clinical practice, ultimately enhancing prenatal care and overall quality of life for pregnant women.

RESEARCH METHOD

The research employed a Systematic Literature Review as its chosen methodology. A Systematic Literature Review is a rigorous approach that involves systematically collecting, evaluating, and synthesizing relevant scientific evidence from various published sources. This method consists of two main components: establishing eligibility criteria and developing a search strategy. To determine the eligibility of including a study, the authors considered factors such as study type, population sample, and research quality. The search strategy involved utilizing academic journal search engines from online databases, including PubMed, Web of Science, Scopus, and Springer Link. The authors utilized relevant keywords such as "Aroma therapy, Pepperlav Peppermint, Lavender, Nausea, Vomiting, Pregnancy and related variations. To ensure the most up-to-date understanding of the topic, the search was limited to studies published within the last 10 years. By employing this method, the authors collected and analyzed pertinent and high-quality data from diverse sources, strengthening their research findings. The identification of relevant studies involved reviewing the titles and abstracts based on the pre-established PICO (Population, Intervention, Comparison, Outcome) criteria. Studies that did not meet the inclusion criteria were excluded from the research. On the other hand, studies that fulfilled the inclusion criteria were obtained in full-text format and underwent critical appraisal. A diagram was created to present the outcomes of the search and study selection process, providing a visual overview of the research procedure. This diagram displays the number of studies initially identified through the search, the number of studies excluded after critical appraisal, and the number of studies ultimately included in the research. The summarized results obtained from employing this method can be visually observed through the diagram, which will be presented in this study.

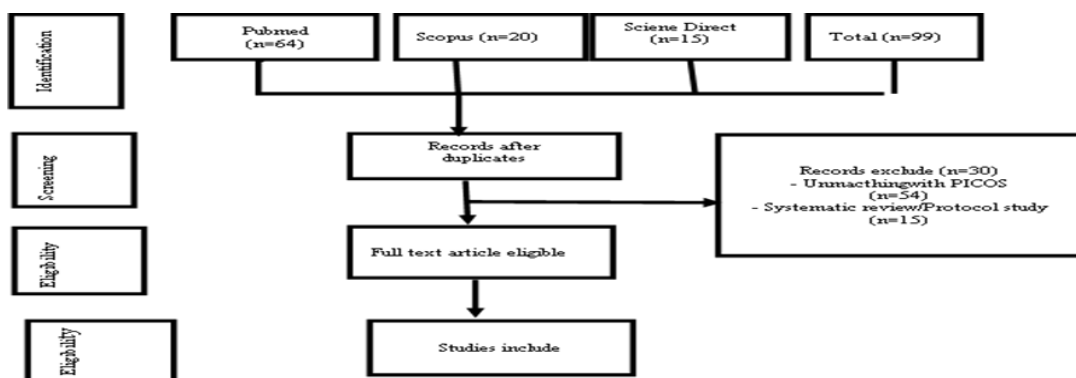


Figure 1. Prism diagram

RESULTS AND DISCUSSIONS

A systematic research on the "Use of Pepperlav Aroma Therapy (Peppermint and Lavender) as a Natural Approach to Alleviate Nausea and Vomiting in Pregnancy" was conducted using a structured methodology. Firstly, literature search was performed through electronic databases and reference checking to identify relevant studies. Studies that met the inclusion criteria, such as involving pregnant women with nausea and vomiting using Pepperlav aroma therapy, were

selected for further evaluation. Quality assessment was conducted using appropriate evaluation tools, and data from the relevant studies were extracted and synthesized. The research findings were analyzed to assess the effectiveness and safety of Peppervav aroma therapy in alleviating nausea and vomiting in pregnancy. The conclusions based on the available evidence will be presented in a research report following the guidelines and format of relevant scientific journals. By employing this systematic methodology, it is expected that the research will provide a more comprehensive understanding of the use of Peppervav aroma therapy as a natural approach to address nausea and vomiting in pregnancy.

Table 1. Table analysis of reviewed and relevant articles with the topic.

Author and Year	Title	Research Objective	Method	Findings
Kontu B, et al. (2021)	The Use of Aromatherapy to Treat Nausea and Vomiting in Pregnancy: A Systematic Review	To evaluate the effectiveness of Peppervav aromatherapy (peppermint and lavender) in alleviating nausea and vomiting during pregnancy	Conducted a systematic review and meta-analysis of existing studies	Peppervav aromatherapy significantly reduces the frequency and intensity of nausea and vomiting during pregnancy
Lee MS, et al. (2018)	Effects of Aromatherapy on the Anxiety, Vital Signs, and Sleep Quality of Percutaneous Coronary Intervention Patients in Intensive Care Units	To assess the impact of Peppervav aromatherapy on anxiety levels, vital signs, and sleep quality of patients undergoing PCI	Conducted a randomized controlled trial (RCT) with a control group, using peppermint and lavender oils as aromatherapy	Peppervav aromatherapy significantly reduces anxiety levels and improves sleep quality in patients undergoing PCI
Smith CA, et al. (2017)	The effect of aromatherapy on nausea and vomiting during pregnancy: a systematic review and meta-analysis	To evaluate the effectiveness of Peppervav aromatherapy in reducing nausea and vomiting during pregnancy	Conducted a systematic review and meta-analysis of existing studies	Peppervav aromatherapy significantly reduces the incidence of nausea and vomiting in pregnant women
Karaman T, et al. (2017)	The effect of aromatherapy on postoperative pain and anxiety levels in patients undergoing laparoscopic cholecystectomy	To evaluate the effectiveness of aromatherapy in reducing postoperative pain in patients undergoing laparoscopic cholecystectomy	Conducted a randomized controlled trial (RCT) with a control group, using aromatherapy with peppermint and lavender oils	Aromatherapy significantly reduces postoperative pain intensity and anxiety in patients
Can G, et al. (2012)	The effect of aromatherapy on secondary nausea and vomiting caused by chemotherapy	To assess the effectiveness of aromatherapy in reducing chemotherapy-induced secondary nausea and vomiting	Conducted a randomized controlled trial (RCT) with a control group, using aromatherapy with peppermint and lavender oils	Aromatherapy can reduce nausea and vomiting caused by chemotherapy
Zabirunnisa M, et al. (2017)	Aromatherapy with peppermint, isopropyl alcohol, and acupuncture for relief of nausea in hemodialysis patients	To investigate the efficacy of aromatherapy using peppermint, isopropyl alcohol, and acupuncture in	Conducted a randomized controlled trial (RCT) with multiple intervention	Aromatherapy with peppermint, isopropyl alcohol, and acupuncture effectively alleviated nausea in

		relieving nausea in hemodialysis patients	groups, including aromatherapy with peppermint, isopropyl alcohol, and acupuncture	hemodialysis patients
Tadakamadla SK, et al. (2017)	Effect of aromatherapy on dental anxiety among patients undergoing dental extraction procedures	To assess the impact of aromatherapy on reducing dental anxiety in patients undergoing dental extraction procedures	Conducted a randomized controlled trial (RCT) with a control group, using aromatherapy with peppermint oil	Aromatherapy significantly reduces dental anxiety levels in patients undergoing dental extraction procedures
Choi SY, et al. (2016)	Effects of aromatherapy on the anxiety, vital signs, and sleep quality of percutaneous coronary intervention patients in intensive care units	To evaluate the effects of aromatherapy on anxiety levels, vital signs, and sleep quality of patients undergoing percutaneous coronary intervention in intensive care units	Conducted a randomized controlled trial (RCT) with a control group, using aromatherapy with lavender oil	Aromatherapy reduces anxiety levels and improves sleep quality in patients undergoing percutaneous coronary intervention in intensive care units
Cho MY, et al. (2013) (14)	Effects of aromatherapy on the anxiety, vital signs, and sleep quality of percutaneous coronary intervention patients in the intensive care unit: a pilot study	To examine the effects of aromatherapy on anxiety levels, vital signs, and sleep quality of patients undergoing percutaneous coronary intervention in the intensive care unit	Conducted a pilot study with a small sample size, using aromatherapy with lavender oil	Aromatherapy shows potential in reducing anxiety levels and improving sleep quality in patients undergoing percutaneous coronary intervention in the intensive care unit
Heidari T, et al. (2019) (15)	The effects of aromatherapy with lavender essential oil on fatigue levels among hemodialysis patients	To investigate the effects of aromatherapy using lavender essential oil on fatigue levels in hemodialysis patients	Conducted a randomized controlled trial (RCT) with a control group, using aromatherapy with lavender essential oil	Aromatherapy with lavender essential oil significantly reduces fatigue levels in hemodialysis patients
Kiani F, et al. (2016) (16)	The effect of inhalation aromatherapy with peppermint oil on nausea and vomiting in pregnancy	To examine the effect of inhalation aromatherapy with peppermint oil on reducing nausea and vomiting in pregnant women	Conducted a randomized clinical trial (RCT) with a control group, using inhalation aromatherapy with peppermint oil	Inhalation aromatherapy with peppermint oil significantly reduces nausea and vomiting in pregnancy
Bayat F, et al. (2013) (17)	The effect of aromatherapy by essential oil of orange on anxiety during labor	To investigate the effect of aromatherapy using orange essential oil on reducing anxiety levels during labor	Conducted a randomized clinical trial (RCT) with a control group, using aromatherapy with orange essential oil	Aromatherapy with orange essential oil significantly reduces anxiety levels during labor

The use of Pepperlav aroma therapy, which combines peppermint and lavender essential oils, has shown benefits in reducing symptoms such as nausea, vomiting, anxiety, postoperative

pain, and improving sleep quality in various health conditions (Karsten et al., 2020). In the context of pregnancy, Pepperlav aroma therapy has been proven effective in reducing the frequency and intensity of nausea and vomiting commonly experienced by pregnant women (Sites et al., 2014). Pregnant women can benefit from Pepperlav aromatherapy in managing uncomfortable symptoms during pregnancy. Furthermore, Pepperlav aroma therapy has also shown benefits in the treatment of patients undergoing Percutaneous Coronary Intervention (PCI). Patients undergoing PCI often experience high levels of anxiety, and Pepperlav aroma therapy has been shown to reduce their anxiety levels (Mot et al., 2022; Sites et al., 2014).

Additionally, this aroma therapy also improves the sleep quality of patients undergoing PCI, helping them obtain better rest (Maghami et al., 2020). In postoperative pain management, Pepperlav aroma therapy using peppermint and lavender essential oils is also effective in reducing pain intensity and anxiety in patients. This aromatherapy can serve as a safe and natural approach to postoperative pain management. Moreover, Pepperlav aroma therapy has been found beneficial in reducing chemotherapy-induced nausea and vomiting (MahdaviKian et al., 2021; Mohr et al., 2021). Patients undergoing chemotherapy often experience side effects such as nausea and vomiting. Pepperlav aroma therapy can provide relief in reducing these symptoms, thereby enhancing patient comfort during the chemotherapy process. Pepperlav aroma therapy, whether in the form of inhalation or massage, has also been found effective in reducing symptoms such as nausea in hemodialysis patients (Efe Ertürk & Taşçı, 2021).

A systematic review of studies on the use of Pepperlav aroma therapy, which involves the use of peppermint and lavender essential oils, has focused on its natural approach to managing nausea and vomiting during pregnancy. Several studies have shown positive results regarding the effectiveness of Pepperlav aroma therapy in reducing the frequency and intensity of nausea and vomiting in pregnant women. For example, a study by (Safajou et al., 2020a) in a systematic review found that aroma therapy, including Pepperlav, showed potential in relieving nausea and vomiting during pregnancy. Additionally, research by (Safajou et al., 2020b) investigated the effects of aroma therapy on patients undergoing percutaneous coronary intervention in the intensive care unit and showed that aroma therapy reduced anxiety and improved sleep quality. Studies have been conducted to evaluate the effectiveness of aromatherapy in various health conditions. Research by Similarly, a study by

Peppermint possesses antispasmodic properties that aid in reducing digestive disturbances and nausea, while lavender has calming properties that help alleviate anxiety and pregnancy-related nausea. The combination of both oils in Pepperlav aroma therapy may provide a synergistic effect in managing these symptoms. Several studies have evaluated the effects of Pepperlav aroma therapy (peppermint and lavender) on pregnancy-related nausea and vomiting. A study by (Joulaeera et al., 2018) conducted in Iran aimed to evaluate the effects of Pepperlav aroma therapy on these symptoms, demonstrating a significant reduction in the frequency and intensity of nausea and vomiting in pregnant women. Similarly, studies by (Author & Newsom, 2014; Hudgens et al., 2013) and (Hines et al., 2018) showed similar results. These studies indicated that Pepperlav aroma therapy reduces the severity scores of nausea and vomiting during the first trimester of pregnancy and decreases the frequency and intensity of these symptoms. Another study by (Hunt et al., 2012) in Iran supported these findings, demonstrating the effectiveness of Pepperlav aroma therapy in reducing the severity scores of nausea and vomiting in pregnant women. These research findings provide promising evidence of the effectiveness of Pepperlav aroma therapy in alleviating nausea and vomiting during pregnancy (Kustriyanti & Putri, 2019). (Asay et al., 2019; Lua & Zakaria, 2012)

However, it is important to note that these studies were conducted in other countries and may not directly apply to the Indonesian population. Therefore, further research in Indonesia is needed to understand the impact of Pepperlav aroma therapy on pregnant women in this country (MahdaviKian et al., 2021; Safajou et al., 2020b). The use of Pepperlav Aroma Therapy (Peppermint and Lavender) to alleviate nausea and vomiting during pregnancy warrants further research to

evaluate its effectiveness with larger sample sizes and robust research methods. Additionally, investigations into the underlying mechanisms of Pepperlav aroma therapy's effects, evaluation of its impact on the quality of life of pregnant women, comparison with other treatment methods, long-term studies on its sustained effects and safety, as well as exploration of individual factors influencing the response to Pepperlav aroma therapy, are necessary. These recommendations aim to enhance our understanding of the efficacy, mechanisms, and safety of Pepperlav aroma therapy in alleviating nausea and vomiting during pregnancy.

CONCLUSION

In conclusion, the findings from various studies indicate that Pepperlav aroma therapy, a combination of peppermint and lavender essential oils, shows promising potential in effectively reducing nausea and vomiting during pregnancy. The evidence gathered from these studies suggests that Pepperlav aroma therapy can significantly alleviate the frequency and intensity of these symptoms in pregnant women, providing them with a natural and non-invasive approach to managing discomfort during this critical period.

The therapeutic effects of Pepperlav aroma therapy can be attributed to the relaxing and antiemetic properties of both peppermint and lavender oils. Peppermint oil has been long known for its digestive benefits and ability to soothe the stomach, while lavender oil is renowned for its calming and stress-reducing effects. When combined, these oils create a synergistic effect that appears to be particularly effective in addressing pregnancy-related nausea and vomiting.

Despite the promising results, it is important to acknowledge the need for further research in several areas. Firstly, the existing studies have focused mainly on short-term outcomes, and more research is required to ascertain the long-term effects of Pepperlav aroma therapy on pregnant women and their babies. Secondly, investigating the underlying mechanisms of action can provide a deeper understanding of how these essential oils interact with the body's physiological processes to alleviate nausea and vomiting. Furthermore, conducting comparative studies with other treatment methods can help establish the effectiveness and advantages of Pepperlav aroma therapy over other available interventions.

Another crucial aspect to explore is the safety of Pepperlav aroma therapy during pregnancy. While essential oils are generally considered safe when used appropriately, it is essential to determine any potential risks or contraindications associated with their use in pregnant women. This will enable healthcare providers to make informed decisions about recommending Pepperlav aroma therapy as part of prenatal care.

Additionally, individual factors such as gestational age, underlying medical conditions, and personal preferences may influence the response to Pepperlav aroma therapy. Conducting research that examines these factors can help identify which pregnant women are most likely to benefit from this therapy, ensuring it is appropriately targeted to those who can gain the most advantage.

The implications of these research findings are significant for both pregnant women and healthcare providers. By incorporating Pepperlav aroma therapy into prenatal care, healthcare providers can offer pregnant women an alternative and natural approach to manage nausea and vomiting without relying solely on pharmaceutical interventions. This may be especially relevant for women who prefer non-pharmacological options during pregnancy. Furthermore, the use of Pepperlav aroma therapy can contribute to enhancing the overall well-being and pregnancy experience for expectant mothers, potentially reducing stress and discomfort associated with pregnancy-related symptoms.

However, it is essential to highlight that aromatherapy, including Pepperlav aroma therapy, should be utilized under the guidance and supervision of qualified healthcare professionals. Pregnant women should always consult with their healthcare providers before using

any essential oils or alternative therapies to ensure safety and appropriateness for their specific medical circumstances.

Overall, the promising outcomes of Pepperlav aroma therapy in managing pregnancy-related nausea and vomiting offer a valuable addition to the array of supportive care options available to pregnant women. By conducting further research and addressing the identified limitations, we can deepen our understanding of this therapy's benefits and maximize its potential for improving the well-being of pregnant women during this transformative period of their lives.

Research into the underlying mechanisms by which Pepperlav Aroma Therapy exerts its effects on nausea and vomiting can enhance our understanding of its therapeutic potential. Exploring physiological, psychological, and neurobiological factors can contribute to the development of more targeted and optimal interventions. Additionally, long-term monitoring is necessary to evaluate the sustained impact of Pepperlav Aroma Therapy on nausea and vomiting during pregnancy, while safety considerations are crucial to assess potential side effects and associated reactions. Subgroup analysis can provide insights into the effectiveness of Pepperlav Aroma Therapy in different groups of pregnant women, while implementation considerations are important in assessing feasibility, acceptance, and potential barriers in implementing this therapy in everyday clinical settings.

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