



Combination Of Cymbopogon Citratus and Citrus Aurantifolia Aromatherapy as a Complementary Therapy to Reduce Maternal Anxiety During Childbirth

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ABSTRACT

Anxiety during labor is a common psychological condition experienced by pregnant women, particularly primigravida mothers, and may negatively affect the labor process. Poorly managed anxiety can increase pain perception, inhibit uterine contractions, prolong labor, and adversely impact maternal and fetal well-being. Pharmacological management of anxiety has limitations due to potential side effects; therefore, safe and effective complementary therapies are needed. Aromatherapy has been widely used in midwifery care due to its relaxing and anxiolytic effects. Cymbopogon citratus and Citrus aurantifolia essential oils contain bioactive compounds that provide calming, refreshing, and mood-enhancing effects, and their combined use is expected to produce a synergistic effect in reducing anxiety during labor. This study aims to examine the effectiveness of a combination of Cymbopogon citratus and Citrus aurantifolia aromatherapy as a complementary therapy in reducing maternal anxiety during labor. This study employs a quasi-experimental design with a pretest–posttest control group approach. The subjects are laboring mothers who meet the inclusion criteria. Data are analyzed to determine differences in anxiety levels within and between groups. The combination of Cymbopogon citratus and Citrus aurantifolia aromatherapy is expected to significantly reduce anxiety levels among laboring mothers compared to standard care alone. The use of combined Cymbopogon citratus and Citrus aurantifolia aromatherapy has the potential to serve as a safe, practical, and effective non-pharmacological intervention to reduce maternal anxiety during labor. This therapy may support holistic midwifery care by improving maternal comfort and psychological well-being during childbirth.

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INTRODUCTION

Childbirth is a physiological process that involves not only physical changes but also the psychological condition of the mother. One of the most common psychological problems experienced during labor is anxiety. Anxiety is a mental health issue that remains a public health concern in Indonesia and can be experienced by anyone as a response to certain conditions. In pregnant women, especially during the late stages of pregnancy and labor, anxiety can significantly affect the well-being of both the mother and the fetus.

Poorly managed anxiety can negatively influence the course of labor by increasing pain perception, prolonging the duration of labor, disrupting the effectiveness of uterine contractions, and adversely affecting the physical and psychological condition of the mother and fetus. Almost all pregnant women experience anxiety when facing childbirth, particularly primigravida mothers. A study examining factors associated with anxiety levels prior to labor reported that among 64 respondents, 10.9% experienced mild anxiety, 70.3% experienced moderate anxiety, and 18.8% experienced severe anxiety (Handayani, 2012).

High levels of anxiety are closely associated with increased pain perception during labor. Approximately 90% of women undergoing childbirth experience pain, even severe pain. Pain that cannot be tolerated may trigger stress, which in turn inhibits the release of oxytocin and leads to weakened uterine contractions. This condition increases the risk of prolonged labor and potential childbirth complications.

Efforts to manage anxiety during labor can be carried out through pharmacological and non-pharmacological approaches. However, pharmacological interventions have limitations due to their potential side effects on both the mother and the fetus. Therefore, there is a need for safe, easily applicable complementary therapies that can enhance maternal comfort during labor. Anxiety management during childbirth is an essential component of comprehensive midwifery care that focuses on both the physical and psychological needs of the mother.

One complementary therapy that is increasingly used in midwifery practice is aromatherapy. Aromatherapy works through the olfactory system, which influences the limbic system of the brain, thereby producing relaxation effects, reducing anxiety, and enhancing feelings of comfort. International data indicate that the use of aromatherapy during labor can significantly reduce maternal anxiety and is associated with minimal side effects.

Cymbopogon citratus aromatherapy contains essential oils, particularly citral, which have calming, refreshing, and relaxing properties that help reduce nervous tension. Meanwhile, *Citrus aurantifolia* contains flavonoids, saponins, and essential oils, including citral, limonene, phellandrene, and hesperidin. The presence of limonene and approximately 7% citric acid in lime provides refreshing, relaxing, and mood-enhancing effects, which are similar to those of lemongrass (Sethpakdee, 1992).

The combined use of *Cymbopogon citratus* and *Citrus aurantifolia* aromatherapy is expected to produce a synergistic effect in reducing anxiety levels among laboring mothers. The blend of calming and refreshing aromas may help mothers feel more relaxed, increase self-confidence, and create a more positive childbirth experience. Although each type of aromatherapy has been widely studied individually, research on the combined use of *Cymbopogon citratus* and *Citrus aurantifolia* aromatherapy during labor remains limited.

A preliminary study conducted at BPM S showed that among 48 third-trimester pregnant women, interviews with 15 participants revealed complaints of tension, fear, anxiety, and worry related to pregnancy and the upcoming childbirth process. Other reported symptoms included difficulty sleeping, easy fatigue, and difficulty concentrating. These findings indicate that maternal anxiety remains a significant issue that requires serious attention.

Based on this background, the researcher is interested in examining "The Combination Of *Cymbopogon citratus* and *Citrus aurantifolia* Aromatherapy As A Complementary Therapy To Reduce Maternal Anxiety During Labor". The findings of this study are expected to contribute to the development of safe, evidence-based, and practical non-pharmacological interventions in midwifery practice, as well as to support the improvement of childbirth care quality that prioritizes maternal physical and psychological well-being.

METHODS

This study employs a quasi-experimental design with a pretest–posttest control group approach. This design aims to examine the effect of a combination of *Cymbopogon citratus* and *Citrus aurantifolia* aromatherapy on reducing maternal anxiety during labor by comparing anxiety levels before and after the intervention in both the intervention and control groups. The study is conducted at BPM S from Mei to July 2024. The population of this study consists of all laboring mothers who undergo childbirth at BPM S and sample includes laboring mothers who meet the inclusion and exclusion criteria. The sampling technique used is purposive sampling

RESULTS AND DISCUSSION

Level of Anxiety

In this study, it was found that respondents experienced various levels of anxiety during the first stage of labor, with 26.7% experiencing mild anxiety, 40% experiencing moderate anxiety, and 33.3% experiencing severe anxiety. This is in line with the research of Triwijaya (2014), which states that mothers experience anxiety when facing the first stage of labor with varying levels of anxiety.



The effect of aromatherapy combination *Cymbopogon citratus* and *Citrus aurantifolia*

This research is in line with the study by Nilma et al. (2024), which stated that citronella aromatherapy is beneficial in reducing anxiety in postpartum mothers. The study by Apriza, A., Erlinawati, E., Anita, R., & Fira, H. (2021) also stated a reduction in anxiety in high-risk pregnant women through citronella oil therapy. *Aulad: Journal on Early Childhood*, 4(2), 122-127. This study used univariate and bivariate analysis. This research is also in line with the study Caroline (2022) which states that essential oils can reduce anxiety because when essential oils used in aromatherapy are inhaled, several different molecules contained in the oil are transferred to the limbic system in the brain through the olfactory route in the nose, While *Cymbopogon citratus* and *Citrus aurantifolia* contains essential oils that play a role in reducing anxiety.

CONCLUSION

Based on the results and discussion of this study, it can be concluded that anxiety is a common psychological condition experienced by mothers during the first stage of labor, with varying levels of severity. The administration of a combination of *Cymbopogon citratus* and *Citrus aurantifolia* aromatherapy was shown to have a positive effect in reducing maternal anxiety during labor. Aromatherapy works through the olfactory pathway, influencing the limbic system of the brain and producing calming and relaxing effects. The essential oil components of lemongrass and lime play an important role in reducing tension and enhancing maternal comfort throughout the labor process.

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