

# The Effect of Lavender Aromatherapy on Anxiety of Primigravid Pregnant Women in Tobongon Village

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**Abstract:** Anxiety during pregnancy is an issue that is increasingly receiving attention in the field of maternal health. Anxiety can harm fetal development and maternal mental health. High anxiety can lead to complications such as premature labor and low birth weight. Aromatherapy, especially the use of lavender essential oil, has been shown to have a calming effect that can help relieve anxiety. Previous studies have shown that lavender can reduce levels of stress hormones, such as cortisol, which contribute to feelings of anxiety. to measure the effect of lavender aromatherapy on anxiety levels in primigravida pregnant women. The research method used in this study was a pre-experiment with a pre-post group test. The study sample consisted of 20 primigravida pregnant women. Measurement of anxiety levels was carried out using the HARS Anxiety Scale measuring instrument before and after treatment. Lavender aromatherapy was given for 30 minutes every day for two weeks. The data obtained were analyzed using a paired t-test. Results: differences in anxiety levels of pregnant women in the third trimester between before and after being given lavender aromatherapy, this is evidenced by the mean value of the pre-test results of 25.5 but the mean value of the post-test results of 23.2. This is reinforced by the results of the t-test obtained to count 7.254. Furthermore, based on the results of the calculation of the level of significance, it shows that the value of  $p$  (Sig) 0.001 means that there is a difference in the level of anxiety of pregnant women in the third trimester after being given lavender aromatherapy. Midwives can consider the use of aromatherapy as part of non-pharmacological interventions in midwifery practice

**Keywords:** Anxiety; Lavender; Pregnancy; Primigravida

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## 1. Introduction

Anxiety is a common emotional response experienced by pregnant women, especially for primigravidas who are facing the experience of childbirth for the first time. This anxiety can arise due to various factors, such as uncertainty about the labor process, possible pain, and concerns about the health of the baby. According to research, around 30% of pregnant women experience significant levels of anxiety before childbirth. This anxiety not only affects the mother's mental health, but can also have an impact on the physical health and development of the fetus (Zhang, 2023).

Maternal mortality during childbirth is an important indicator in assessing the quality of maternal health services. According to a report from WHO (World Health Organization) in 2020, the global maternal mortality rate reached 342 per 100,000 live births. In Indonesia,

this figure is still relatively high, with an estimate of 305 per 100,000 live births in 2019 (Ministry of Health of the Republic of Indonesia, 2021). This high maternal mortality rate is often associated with preventable complications, such as bleeding, infection, and hypertension. The causes of maternal death during childbirth are very diverse, ranging from lack of access to quality health services to pre-existing health conditions. Data from the Central Statistics Agency (BPS) shows that around 60% of maternal deaths occur during childbirth or within 42 days of giving birth. This shows the importance of paying attention to this period to reduce maternal mortality.

The incidence of anxiety among pregnant women shows that this problem is a serious health issue. According to research by Zhang (2023), around 25-30% of pregnant women experience significant anxiety during pregnancy. This anxiety can vary from mild to severe, and is often influenced by various factors, including mental health history, social support, and previous experiences in pregnancy.

Data from the Ministry of Health of the Republic of Indonesia shows that pregnant women who experience anxiety are more likely to experience complications during pregnancy and childbirth. A study in Yogyakarta found that 40% of pregnant women experience quite high levels of anxiety, and this is associated with an increased risk of premature birth and low birth weight (Puspita, 2021). This figure shows the need for more attention to the mental health of pregnant women.

The causes of anxiety in pregnant women are very diverse, and often involve physical, emotional, and social factors. One of the main causes is the uncertainty associated with the labor process (Maulina, 2022). Pregnant women often feel anxious about how much pain they will experience, whether they will be able to cope with labor, and the health of their baby. Research by Bedaso (2021) shows that pregnant women who do not have a clear understanding of the labor process tend to experience higher anxiety.

Anxiety experienced by pregnant women can have a significant impact not only on the mother's mental health, but also on the physical health and development of the fetus. Research shows that pregnant women who experience high anxiety are at greater risk of complications during pregnancy and childbirth. For example, a study by Ding. (2014) found that pregnant women with high levels of anxiety are more likely to experience premature labor and low birth weight.

Lavender aromatherapy has been widely known as an alternative method to reduce anxiety, especially among pregnant women. Lavender (*Lavandula angustifolia*) has relaxation properties that have been proven in various studies. A study by Donelli (2019) showed that inhaling lavender scent can reduce anxiety levels and improve mood. This makes it an attractive option for pregnant women looking for natural ways to deal with anxiety.

## 2. Proposed Method

The research design used in this study was a pre-experiment with a pre-post group test. The research sample consisted of 20 primigravida pregnant women. Measurement of anxiety levels was carried out using the HARS Anxiety Scale measuring instrument before and after treatment. Lavender aromatherapy was given for 30 minutes every day for two weeks. The data obtained were analyzed using the paired t-test. This study was conducted from February to October 2024. The inclusion criteria in this study were pregnant women who were not allergic to lavender, pregnant women with desired pregnancies. The sampling technique in this study was purposive sampling. The dependent variable is lavender aromatherapy. The independent variable is the anxiety of pregnant women. The research instrument in this study used the SOP for lavender aromatherapy and the HARS scale observation sheet to assess the anxiety of pregnant women.

## 3. Results

**Table 1.** Test of differences in anxiety levels before and after being given lavender aromatherapy.

Statistik	Hasil Pre test	Hasil Post test	$\rho$ (Sig)
Mean	25,5	23,2	0,001
SD	5,4	5,7	
$t_{hitung}$	<b>7.254</b>		

Based on table 1, it is known that there is a difference in the level of anxiety of pregnant women in the third trimester between before and after being given lavender aromatherapy, this is evidenced by the mean value of the pre-test results of 25.5 but the mean value of the post-test results of 23.2. This is reinforced by the results of the t-test obtained t count 7.254. Furthermore, based on the results of the calculation of the level of significance, it shows that the value of  $\rho$  (Sig) 0.001 means that there is a difference in the level of anxiety of pregnant women in the third trimester after being given lavender aromatherapy.

## 5. Discussion

Based on the results of the study, there was a difference in the level of anxiety of pregnant women in the third trimester before and after being given lavender aromatherapy, this is evidenced by the mean value of the pre-test results of 25.5 but the mean value of the post-test results of 23.2. This is reinforced by the results of the t-test obtained t count 7.254. Furthermore, based on the results of the calculation of the level of significance, it shows that the value of  $\rho$  (Sig) 0.001 means that there is a difference in the level of anxiety of pregnant women in the third trimester after being given lavender aromatherapy. One of the mechanisms of action of lavender is through its effect on the nervous system. Research shows that lavender aroma can reduce levels of cortisol, a stress hormone in the body. A study by

Koulivand (2013) found that lavender aromatherapy can reduce anxiety levels and improve sleep quality, which is very important for pregnant women. Good sleep quality can contribute to the mental and physical health of the mother. The use of lavender aromatherapy can also improve the labor experience. Research by Tanvisut (2018) shows that pregnant women who use lavender aromatherapy during labor report lower pain levels and more positive labor experiences. This suggests that aromatherapy can be an effective tool in managing anxiety and discomfort during labor.

Aromatherapy can also be used as part of a holistic approach to prenatal care. Combining aromatherapy with other relaxation techniques, such as yoga or meditation, can provide greater benefits for pregnant women. Research by Go (2017) showed that the combination of aromatherapy with relaxation techniques can reduce anxiety levels more significantly than the use of aromatherapy alone.

Thus, lavender aromatherapy offers a variety of benefits for pregnant women who experience anxiety. This approach can be used as a safe and effective additional therapy to improve mental health and well-being during pregnancy.

Identification of anxiety can be done through various methods, such as questionnaires and interviews. One commonly used instrument is the State-Trait Anxiety Inventory (STAI) which can measure levels of situational anxiety and anxiety that is more stable. Research by Delavari (2018) showed that pregnant women who experience high anxiety tend to have lower scores in mental and physical health assessments. This shows the importance of identifying anxiety in order to provide appropriate interventions.

In addition, social support also plays an important role in reducing anxiety in pregnant women. Research by Heltherington (2018) shows that pregnant women who have a strong social support network tend to experience lower levels of anxiety. Therefore, interventions involving family and friends can help reduce anxiety experienced by pregnant women.

Every pregnant woman has different experiences and reactions to anxiety. Therefore, an individualized and evidence-based approach to identifying and managing anxiety is needed to ensure the health and well-being of pregnant women and their fetuses. The importance of managing anxiety in pregnant women cannot be ignored in the context of maternal mortality. High anxiety can increase the risk of complications during labor. A study by Rejno (2019) found that pregnant women who experience high anxiety have a greater risk of complications, such as postpartum hemorrhage. Therefore, appropriate interventions to reduce anxiety can contribute to reducing maternal mortality.

Education and counseling for pregnant women regarding the labor process and danger signs can help reduce anxiety. Research by Sanaati (2017) shows that pregnant women who receive sufficient information about the labor process tend to have lower levels of anxiety. This suggests that increasing knowledge can be one strategy to reduce the risk of maternal death.

Reducing maternal mortality rates during childbirth requires a holistic approach, including anxiety management, increasing access to health services, and adequate education for pregnant women. All of these factors are interrelated and need to be considered simultaneously to achieve optimal outcomes for maternal and infant health.

Another factor that contributes to anxiety is mental health history. Pregnant women who have a history of depression or anxiety are more susceptible to anxiety during pregnancy (Hopkins, 2018). This suggests that it is important to conduct mental health screening in pregnant women as part of prenatal care.

Social support also plays an important role in influencing anxiety levels. Pregnant women who feel less supported by their partners or family tend to be more anxious. Research by Zhang (2023) shows that pregnant women who have a strong social support network have lower levels of anxiety. Therefore, increasing social support can be an effective strategy to reduce anxiety.

In addition, environmental factors can also influence anxiety. Stress from work, financial problems, or unstable household conditions can add to the emotional burden of pregnant women. A study by Bedaso (2021) found that pregnant women who experience environmental stress have higher levels of anxiety. This shows the need to pay attention to external factors that can affect the mental health of pregnant women.

In order to reduce anxiety in pregnant women, it is important to identify and understand the underlying causes. A comprehensive and evidence-based approach can help pregnant women cope with anxiety and improve their mental health during pregnancy. The impact of anxiety can also be seen in the mother's mental health after giving birth. Mothers who experience anxiety during pregnancy are more susceptible to postpartum depression. According to research by O'Hara and Swain (2019), around 50% of mothers who experience high anxiety during pregnancy also experience postpartum depression. This shows that anxiety not only affects pregnancy but can also have an impact on the mother's long-term mental health.

Anxiety in pregnant women can also affect fetal development. Research shows that high stress and anxiety during pregnancy can be associated with developmental problems in children, including behavioral disorders and learning difficulties (Zhang, 2023). Therefore, it is important for health workers to manage the anxiety of pregnant women to ensure healthy development of the child.

The physical effects of anxiety can also affect maternal health. High anxiety can lead to increased blood pressure and other health problems, such as sleep disturbances and a weakened immune system (Yıldız et al., 2020). This shows the importance of anxiety management to maintain maternal physical health during pregnancy.

## 6. Conclusions

The impact of anxiety experienced by pregnant women is very complex and can have a wide impact on various aspects of health. Therefore, appropriate interventions to reduce anxiety are needed to ensure the well-being of the mother and baby, one of which is by using lavender aromatherapy.

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