



## The effectiveness of lavender and jasmine aroma therapy towards pain levels

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### ABSTRAK

**Latar Belakang:** Angka kematian ibu di negara-negara Asia Tenggara yaitu Indonesia 190 per 100.000 kelahiran hidup, Vietnam 49 per 100.000 kelahiran hidup, Thailand 26 per 100.000 kelahiran hidup, Brunei 27 per 100.000 kelahiran hidup, dan Malaysia 29 per 100.000 kelahiran hidup (WHO, 2015). Data kematian ibu di Daerah Istimewa Yogyakarta tahun 2020 ditemukan 40 kasus, memiliki kenaikan dari tahun sebelumnya yaitu 36 kasus. Pada wilayah kabupaten Bantul terdapat 20 kasus kematian ibu (Dinkes DIY, 2020). Metode penghilang rasa sakit tenaga kerja dibagi menjadi non-farmakologis (psychoprophylactic, hipnotis, akupunktur, terapi penyembuhan sentuhan, latihan relaksasi, terapi pijat, terapi musik) dan farmakologis (obat-obatan sistemik, anestesi inhalasi, anestesi umum, anestesi regional) (Tanvisut et al., 2018).

**Tujuan:** Untuk mengetahui pengaruh aromaterapi lavender dan jasmine terhadap tingkat nyeri pada persalinan kala I di Klinik Bina Sehat.

**Metode:** quasy experiment dengan rancangan pretest and posttest group design. sampel sebanyak 38 responden menggunakan rumus (Lemeshow et al., 1997) dalam Sastroasmoro dan Ismail (2011). Teknik pengambilan sampel dengan simple random sampling.

**Hasil:** Menunjukkan bahwa aromaterapi jasmine lebih efektif menurunkan tingkat nyeri pada ibu bersalin kala I daripada aromaterapi lavender di Klinik Bina Sehat. Terdapat pengaruh yang signifikan dari hasil tingkat nyeri persalinan kala I sebelum dan sesudah periode intervensi aromaterapi lavender dan jasmine.

**Kesimpulan:** Aromaterapi jasmine lebih efektif menurunkan tingkat nyeri pada ibu bersalin kala I daripada aromaterapi lavender di Klinik Bina Sehat dengan nilai  $Z_{Wilcoxon}$  didapatkan sebesar -4,001 dan nilai signifikan sebesar 0,000 ( $p < 0,000$ ). Terdapat pengaruh yang signifikan dari hasil tingkat nyeri persalinan kala I sebelum dan sesudah periode intervensi aromaterapi lavender dan jasmine didapatkan sebesar -4,143 dan nilai signifikan sebesar 0,000 ( $p < 0,000$ ).

**KATA KUNCI:** aromaterapi lavender; aromaterapi jasmine; tingkat nyeri bersalin

### ABSTRACT

**Background:** The maternal mortality rate in Southeast Asian countries is Indonesia 190 per 100,000 live births, Vietnam 49 per 100,000 live births, Thailand 26 per 100,000 live births, Brunei 27 per 100,000 live births, and Malaysia 29 per 100,000 live births (WHO, 2015). Data on maternal mortality in the Special Region of Yogyakarta in 2020 found 40 cases, an increase from the previous year, which was 36 cases. In the Bantul district there are 20 cases of maternal mortality (DIY Health Office, 2020). Labor pain relief methods

are divided into non-pharmacological (psychoprophylactic, hypnosis, acupuncture, touch healing therapy, relaxation exercises, massage therapy, music therapy) and pharmacological (systemic drugs, inhalation anesthetics, general anesthesia, regional anesthesia) (Tanvisut et al., 2018).

**Objectives:** This study aims to determine the effect of lavender and jasmine aromatherapy on pain levels in the first stage of labor at the Bina Sehat Clinic.

**Methods:** Quasi experiment with pretest and posttest group design. a sample of 38 respondents using the formula (Lemeshow et al., 1997) in Sastroasmoro and Ismail (2011). Sampling technique with simple random sampling

**Results:** Shows that jasmine aromatherapy is more effective in reducing pain levels in first-stage mothers than lavender aromatherapy at the Bina Sehat Clinic. There is a significant effect of the level of labor pain in the first stage before and after the lavender and jasmine aromatherapy intervention period.

**Conclusions:** Jasmine aromatherapy was more effective in reducing pain levels in first-stage labor than lavender aromatherapy at the Bina Sehat Clinic with a Z\_Wilcoxon value obtained at -4.001 and a significant value of 0.000 ( $p < 0.000$ ). There was a significant effect on the results of the first stage of labor pain before and after the lavender and jasmine aromatherapy intervention period, which was -4.143 and a significant value of 0.000 ( $p < 0.000$ ).

**KEYWORD:** lavender aromatherapy ; jasmine aromatherapy; labor pain level

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## INTRODUCTION

Maternal Mortality Rate (MMR) is still a serious health problem in developing countries. According to a report by the World Health Organization (WHO), in 2014 several countries had a fairly high MMR, such as Sub-Saharan Africa with 179,000, South Asia with 69,000, and Southeast Asia with 16,000. The maternal mortality rate in Southeast Asian countries is Indonesia 190 per 100,000 live births, Vietnam 49 per 100,000 live births, Thailand 26 per 100,000 live births, Brunei 27 per 100,000 live births, and Malaysia 29 per 100,000 live births (1).

According to WHO the maternal mortality rate (MMR) in 2014 in the world was 289,000. In Indonesia itself, the maternal and perinatal mortality rate is quite high. Even though there are quite a lot of health services and health workers, out of five million births that occur in Indonesia every year, it is estimated that 20,000 mothers die from pregnancy complications. The maternal

mortality rate in Indonesia reaches 359/100,000 population or an increase of about 57%(2).

According to BKKBN data, the incidence of prolonged labor in Indonesia is 35%, the incidence of premature rupture of membranes is more than 16 hours as much as 15%, bleeding during labor 8%, fever at delivery 8% data obtained since 2007-2012(3). Data on maternal mortality in the Special Region of Yogyakarta in 2020 found 40 cases, an increase from the previous year, which was 36 cases. In the Bantul district there are 20 cases of maternal mortality(4).

Prolonged or prolonged labor is one of the contributors to the Maternal Mortality Rate (MMR), prolonged labor is caused by one of the factors in labor, namely weakened contractions, weak contractions can be caused by psychological factors, namely fatigue, and stress which has an impact on the inhibition of the release of the hormone oxytocin for the process.

contraction. Stress on the mother will also have an impact on fetal distress which can result in fetal death. Maternal Mortality Rate (MMR) as a measure of the success of a health. The highest maternal mortality is in the African region(1). Labor pain, which is one of the most severe pains experienced, can vary widely in terms of intensity and location . In some cultures, women prefer cesarean delivery to avoid pain(5).

Efforts to reduce pain in maternity with pharmacological and non-pharmacological methods so that pain can be controlled. Pharmacological methods, namely by using analgesia and anesthesia, which are mostly medical procedures, tend to be more expensive and have side effects on the mother and baby. At this time non-pharmacological methods have been studied extensively and become a trend that can be developed. Some examples of non-pharmacological methods of labor pain include acupressure, acupuncture, aromatherapy, hypnobirthing, hot and cold methods, reflexology, distraction and massage (6).

Labor pain relief methods are divided into non-pharmacological (psychoprophylactic, hypnotic, acupuncture, touch healing therapy, relaxation exercises, massage therapy, music therapy) and pharmacological (systemic drugs, inhalation anesthetics, general anesthesia, regional anesthesia)(7). The use of non-pharmacological pain techniques helps progress labor and shortens the duration. Inhaling aromatherapy can promote emotional health, tranquility, relaxation or rejuvenation of the human body. Aromatherapy provides relaxation and increases the mother's ability to cope with labor pain(8).

The next non-pharmacological method is aromatherapy. Aromatherapy is one of the non-pharmacological methods to reduce pain. Aromatherapy / pleasant smells and provide a sense of comfort and relaxation to the mother's body and mind, pain and anxiety will be reduced

so that pain will decrease during the first stage of the active phase of labor( 6).

Lavender aromatherapy has advantages in anxiety and pain levels, a study conducted by the Institute in Japan showed that the anti-anxiety and anti-pain effects(Sulakso, 2013). Lavender aromatherapy can increase alpha waves in the brain and these waves help create a relaxed state. Lavender essential oil can reduce anxiety(9).

Based on the results of a preliminary study interview with the midwife at the Bina Sehat Clinic, it was found that maternity mothers who experienced labor pain were interpreted as moaning, crying and complaining to their accompanying family. The labor pain experienced by the patient is handled by teaching the companion to stroke the back of the waist. From June to August 2019 at the Bina Sehat Clinic, there were 10 referrals with prolonged labor problems. Based on this phenomenon, the authors are interested in using the non-pharmacological concept of lavender and jasmine aromatherapy to determine the effectiveness of aromatherapy on the level of pain in active phase I maternity mothers at the Bina Sehat Clinic.

## **MATERIALS AND METHODS**

This type of research is a quasi-experimental or quasi-experimental research. The population in this study were mothers who gave birth at the Bina Sehat Clinic. The estimated sample size used for each group is determined using the formula (Lemeshow et al., 1997) in Sastroasmoro and Ismail (2011). From the calculation of the formula, the sample size is 17 respondents for each group. To anticipate sample loss, 10% is added to each group so that the number of samples in each group is 19 respondents. So the total sample is 38 respondents. using a sampling technique with simple random sampling. This study compares the results of measuring pretest and posttest scores in each group, the instrument used to measure pain is using a standardized numeric rating scale. The

research was carried out after receiving a research ethic feasibility letter from the Health Research Ethics committee of Aisyiyah University Yogyakarta with No.128/KEP-UNISA/I/2020.

In this study, lavender or jasmine aromatherapy was given. The essential oil used in this study is an essential oil produced from Young Living because it is a pure essential oil and does not contain chemicals or other mixtures so that the aromatherapy effect can be obtained optimally. It is produced from a mixture of 25cc of water or according to the dose that is already on the device with the aroma of 5 drops of essential oil and a distance of 50cm. The tool can be used for a maximum of 4 hours. The aromatherapy is given. Each contrast aromatherapy inhales 4-5 times and is repeated for up to 30 minutes.

## RESULTS AND DISCUSSION

### RESULT

#### Characteristics of Respondents

Frequency distribution of respondents' characteristics in this study as follows :

**Table 1. Frequency distribution of respondent characteristics**

Characteristics	F	%
Age		
20-35 Years	35	87.5
>35 Years	5	12.5
Parity		
Primigravida (G1)	33	82.5
Multigravida (>G2)	7	17.5
Education		
Junior High School	6	15.0
Senior High School	20	50.0
College	14	35.0
Total	40	100

Source: Primary Data 2020

**Table 1** shows that the characteristics of the majority of respondents aged 20-35 years are 5 people (64,1%). Respondents based on parity were dominated by respondents with primigravida (G1), which were 33 people (82.5%) and respondents with multigravida were

7 (17.5%). Most of the respondents had high school education as many as 20 people (50.0%).

#### The level of labor pain in the first stage before and after the lavender aromatherapy intervention period

The description of the research results obtained from the respondents' answers before and after the lavender aromatherapy intervention was given as follows:

**Table 2. Distribution of the frequency of the first stage of labor pain before and after the lavender aromatherapy intervention period**

Pain Level	Category				Total	
	Currently		Heavy		f	%
	F	%	F	%		
Pretest	0	0	20	100	20	100
Posttest	2	10.0	18	90.0	20	100

Source: Primary Data 2020

**Table 2** shows that in the intervention group, before being given lavender aromatherapy, the majority of severe pain intensity was 20 people (100%), and after being given lavender aromatherapy, the moderate pain category was 2 people (10.0%) and the severe category was 18 people (90 people). ,0%).

#### The level of labor pain in the first stage before and after the jasmine aromatherapy intervention period.

The description of the research results obtained from the respondents' answers before and after the jasmine aromatherapy intervention was given as follows:

**Table 3. Frequency distribution of the first stage of labor pain before and after the jasmine aromatherapy intervention period**

Pain Level	Category						Total	
	Currently		Heavy		Very heavy		f	%
	F	%	F	%	F	%		
Pretest	0	0	16	80.0	4	20.0	20	100
Posttest	17	85.0	3	15.0	0	0	20	100

Source: Primary Data 2020

**Table 3** shows that in the intervention group, before being given jasmine aromatherapy, the majority of severe pain intensity was 16 people (80.0%), and after being given jasmine aromatherapy, the moderate pain category was 17 people (85.0%) and the severe category was 3 people (15.0%).

### Differences in the effectiveness of lavender and jasmine aromatherapy.

The results of the first stage of labor pain before and after the lavender and jasmine aromatherapy intervention period can be seen in the table 4.

**Table 4** shows that the mean rank value at the time of the pretest was 1.50 while at the time of the posttest it was 0.00. The *Z*\_Wilcoxon value was obtained at -1.414 and a significant value of 0.157 ( $p > 0.05$ ), meaning that there was no significant difference between the pretest and posttest results of the first stage of labor pain before and after the lavender aromatherapy intervention period.

**Table 4** shows that the mean rank value at the time of the pretest was 9.50 while the posttest was 0.00. The *Z*\_Wilcoxon value was obtained at -4.001 and a significant value of 0.000 ( $p < 0.000$ ), there was a significant difference in the results of the first stage of labor pain before and after the jasmine aromatherapy intervention period.

Based on these results, it shows that jasmine aromatherapy is more effective in reducing pain levels in first stage labor than lavender aromatherapy at the Bina Sehat Clinic.

### Effect of lavender and jasmine aromatherapy on pain levels in the first stage of labor at Bina Sehat Clinic

The results of the effect of lavender and jasmine aromatherapy on pain levels in the first stage of labor at the Bina Sehat Clinic can be seen in the table below:

**Table 5. Logistic Regression Test of the effect of lavender and jasmine aromatherapy on pain levels in first stage labor at Bina Sehat Clinic**

Variable	Sig.	B	Note.
Intervention			
Jasmine	0.000	-4.143	Significant
Lavender			

**Table 5** shows that the value of B in logistic regression was obtained at -4.143 and a significant value of 0.000 ( $p < 0.000$ ), there was a significant effect of the results of the first stage of labor pain before and after the lavender and jasmine aromatherapy intervention period.

The results before being given lavender aromatherapy intervention showed that respondents who had labor pain in the first stage were 20 respondents in the severe category and the results after being given lavender aromatherapy intervention showed as many as 18 respondents in the severe category and 2 respondents in the moderate category. These results have a large difference compared to before the lavender aromatherapy intervention was given.

### DISCUSSION

This study was conducted to determine the effect of lavender and jasmine aromatherapy on

**Table 4. Wilcoxon Signed Ranks Test The level of labor pain in the first stage before and after the lavender and jasmine aromatherapy intervention period**

Variable	Mean Rank	Sig.	Z_Wilcoxon	Note.
Lavender aromatherapy intervention				
Pretest	1.50	0.157	-1,414	Not significant
Posttest	0.00			
Jasmine aromatherapy intervention				
Pretest	9.50	0.000	-4.001	Significant
Posttest	0.00			

pain levels in the first stage of labor at the Bina Sehat Clinic.

### **The level of labor pain in the first stage before and after the lavender aromatherapy intervention period.**

The results before being given lavender aromatherapy intervention showed that respondents who had labor pain in the first stage were 20 respondents in the severe category and the results after being given lavender aromatherapy intervention showed as many as 18 respondents in the severe category and 2 respondents in the moderate category. These results have a large difference compared to before the lavender aromatherapy intervention was given.

The results of the study are in line with previous studies which showed that the intensity of labor pain after slow deep breathing with lavender aromatherapy showed that 5 respondents (16.7%) experienced mild pain, 23 respondents (76.7%) experienced moderate pain and 2 respondents (6.6%) experienced severe pain(10). Labor pain is a subjective experience of physical sensations associated with uterine contractions, cervical dilatation and effacement, and fetal descent during labour. Physiological responses to pain include increased blood pressure, pulse, respiration, sweating, and muscle tension.

The definition of pain according to the International Association for the Study of Pain (IASP) is an unpleasant subjective sensory and emotional experience associated with actual or potential tissue damage. Labor pain is an uncomfortable feeling associated with uterine contractions, cervical dilatation and effacement, decreased presentation, stretching of the vagina and perineum which ends in the fourth stage of labor(11). Pain in the first stage of labor is transmitted via the spinal nerve segment T11-12 and the accessory nerves of the lower thoracic and upper lumbar sympathetic nerves. These nerves originate from the body of the uterus and

cervix. This effort can be done by pharmacological and non-pharmacological methods.

Aromatherapy is very effective when used to control pain. Essential oils will be absorbed by the body through the circulation and nervous system, so that the entire body system can be affected. This is an important therapy when done for specific pain therapy (Allard, 2017; Jopke, 2017; Halcon, 2014 in(12). Aromatherapy channels stimuli through the olfactory glands, causing the release of serotonin, endorphins and non-adrenaline hormones(12).

Non-pharmacological measures to reduce the sensation of pain can be by using aromatherapy(13). Aromatherapy is an additional therapy that is carried out in addition to conventional therapy and modality therapy using pure aromatic plant extracts, namely volatile plant liquids and aromatic compounds also called essential oils, the essential oil used is lavender flower. Lavender contains the chemical linalol which is useful for reducing pain and relaxing the central nervous system(14). In addition to reducing pain and relaxing the central nervous system, lavender can also treat depression and muscle tension, several studies have shown that lavender aromatherapy can lead to pain relief(15).

Aromatherapy also has a wonderful calming effect. Inhaling lavender scent can reduce the secretion of the hormone cortisol from the adrenal glands and produce relaxation by inhibiting parasympathetic activity and stimulating the parasympathetic system. There are no studies that mention the dangers of essential oils for mothers and babies(16).

Touches and deep fragrances affect the soul and emotional level of a person. The organs of touch and smell in the human body system not only function sexually but also function sensually so that they can regulate and correct hormonal imbalances in the body. So that the pain or pain will decrease and make the mother calmer (5).

### **The level of labor pain in the first stage before and after the jasmine aromatherapy intervention period.**

The results before being given jasmine aromatherapy intervention showed that respondents who had labor pain in the first stage were 16 respondents in the severe category and the results after being given jasmine aromatherapy intervention showed as many as 17 respondents in the moderate category. These results have a large difference compared to before the jasmine aromatherapy intervention was given.

These results are consistent with previous studies which showed that pain scores between the latent phase and the beginning of the active phase and baseline were significantly lower in the aromatherapy group. This means that after the aromatherapy intervention is given, the level of labor pain in the first stage can decrease(7).

Pain is a condition in the form of an unpleasant feeling, is very subjective. Everyone's feelings of pain are different in terms of scale or level, and only that person can explain or evaluate the pain they experience.(17).

The intensity of labor pain starts from mild and increases over time, in other words, the greater the cervical opening, the higher the intensity of pain felt by the mother. Therefore, to compare the difference in pain intensity between respondents, it would be more effective to look at the intensity of pain at the same cervical dilatation, so the researchers measured the intensity of pain in respondents in this study, namely when the opening was 6 cm to reduce bias due to the opening factor. The choice of opening 6 is due to the peak of labor pain, namely the opening of 5 cm(18).

According to Handerson in(Magfuroh, 2012) Labor pain factors include parity, age, culture, coping mechanisms, emotional, education level, environment, fatigue, anxiety of past experiences, companion and medical action.

Mothers who are highly educated are more able to tolerate the pain they experience. According to Ye's research in(Puspita, 2013)Maternity mothers who have a good understanding of the labor process have a lighter level of pain than those who do not have knowledge.

The results showed that respondents aged 20-35 years as many as 35 respondents (87.5%) and as many as 5 respondents aged >35 years. The majority of respondents with primigravida parity were 33 respondents (82.5%) and multigravida parity were 7 respondents (17.5%). Most of the respondents had high school education as many as 20 respondents (50.0%), as many as 14 respondents (35.0%) had tertiary education and as many as 6 (15.0%) respondents had junior high school education.

The older one gets, the better the level of one's emotional maturity and ability to deal with and solve various kinds of problems. Women aged 21-35 years have reached the stage of adult development, where they are physically ready to undergo the process of pregnancy because their reproductive organs are fully formed and functioning. Psychologically at this stage of development, they are more ready to adapt to the changes that occur, the structure of life becomes more stable, is able to solve problems with mature thinking and is able to accept new roles.

Labor in primigravida mothers will experience a longer process than the delivery process for multiparous mothers so that in primigravida mothers experience labor pain longer. Thus causing mothers with primigravida to feel more tired, increased pain perception and more severe fear which can increase pain compared to multigravida. This is because the cervix in primiparous clients requires greater energy to stretch because the effect of the intensity of contractions is greater during the first stage of labor.

According to Notoatmodjo (2013), education is a basic human need that is needed for self-development and increasing one's intellectual

maturity. This intellectual maturity affects a person's insight and thinking, both in visible actions and in the way decisions are made. Education level is also one of the factors that influence a person's perception of being more receptive to new ideas. The higher a person's education, the higher the quality of knowledge and the more mature intellectually so that it is easier to adapt to new changes.

The mother's level of education will have an effect on responding to things that come from outside. Mothers who are highly educated will give a more rational response to incoming information and will think about the extent to which these ideas can have an effect.

Previous research related to the analysis of the relationship between respondents' education and the intensity of pain in the first stage of labor showed non-significant results,  $p > 0.05$ , which means that there is no relationship between the pain felt by the mother and education. This shows that labor pain is influenced by many factors and is individual. The possibility of this condition is also caused by pain that is personal. Pain during labor is influenced by physiological factors (uterine contractions, cervical dilatation, pressure of the fetal head on the pelvis, stretching of the birth canal) and psychosocial factors (anxiety, fear, education level, ability to cope with mother, physical environment, culture and ethnicity, and emotional support) (19).

In addition to education, the majority of husbands work as private employees, this is able to support the addition of husband's experience, where husbands who have jobs tend to have several co-workers who can be used as a place to exchange information related to the physiological and psychological changes of their wives during pregnancy and when facing childbirth.

This research is supported by Novina (2014), in her research entitled "Analysis of the Relationship Between Knowledge, Attitude and Husband's Actions on Maternal Health" shows

that the respondent's attitude towards maternal health is having a positive attitude towards his wife's maternal health. The majority of husbands agree that pregnancy checks are carried out in health services. This shows that the husband has a positive attitude by providing support so that his wife does an examination at health services and the husband's assistance is able to influence the psychology of the mother when facing childbirth. Research conducted by Prisma (2013) which shows that husband's assistance affects the anxiety level of primigravida mothers in dealing with the first stage of labor.

Aromatherapy is a method that uses essential oils to improve physical health as well as affect emotional health. Essential oil is the main component of aromatherapy which is taken from aromatic plants. Some of the essential oils available include lavender, marjoram, nutmeg, peppermint, rose, rosemary, and jasmine (20). This is in accordance with this study which showed that the administration of jasmine aromatherapy could reduce the pain felt by the mother during the first stage of labor.

Jasmine, which contains main compounds such as linalool, has benefits as an antidepressant because of the effect of jasmine which will stimulate the serotonin hormone, which encourages energy and improves mood. In addition, jasmine has a sedative substance on the autonomic nerves and mental states that are calming the body, mind and spirit and create positive energy (21).

### **Differences in the effectiveness of lavender and jasmine aromatherapy.**

The results of giving jasmine aromatherapy were more effective in treating labor pain in the first stage when compared to giving lavender aromatherapy. Judging from the pain scale before the intervention, it appears that the lavender group is in the severe category and the jasmine group is in the moderate pain



category. After being given the intervention, the pain scale decreased significantly in the jasmine aromatherapy group.

These results are in line with previous research that giving lavender aromatherapy is proven to be an alternative to complementary therapy to reduce pain. This is because a pleasant smell will create a feeling of calm and pleasure so that it can reduce anxiety and make you more relaxed(21). Lavender aromatherapy is effective in reducing labor pain levels(23). Lavender essential oil provides an analgesic effect, so it can reduce post-tonsillectomy pain(4). The effect of lavender also affects the parasympathetic nerves of the body by reducing the respiratory rate to be slower, so that the pain experienced by laboring patients is reduced (25). This is also in line with previous research which said that lavender aromatherapy was more effective in reducing pain in perineal wounds(Afriani and Rahmawati, 2019). From the discussion above, it can be concluded that aromatherapy has a positive effect because the fresh and fragrant aroma released can stimulate sensory receptors that will affect other organs so that it can have a strong effect on emotions.

### **Effect of lavender and jasmine aromatherapy on pain levels in the first stage of labor at Bina Sehat Clinic**

Lavender and jasmine aromatherapy have been shown to have an effect on reducing labor pain in the active phase of the first stage of labor. It can be seen from the results that there is a decrease in the average pain score of the first stage of the active phase before and after being given aromatherapy intervention, both in the jasmine group and in the lavender group. This proves that the provision of aromatherapy can help relieve pain in the active phase of the first stage of labor, where in this phase the uterine contractions are more frequent and stronger. This is in line with previous research that lavender

aromatherapy has been shown to reduce pain in the first stage of labor in women giving birth. The occurrence of a decrease in pain scale after being given lavender aromatherapy because the scent produced by lavender aromatherapy will stimulate the thalamus to secrete enkephalins which function as pain relievers. The provision of therapy using aromatherapy has been widely given to reduce pain in normal delivery mothers and sectio caesaria(26).

This is evidenced by previous research that the administration of lavender therapy can reduce the intensity of pain in laboring mothers(27). Another presentation shows that lavender aromatherapy has a dominant effect on reducing pain scales(28). In this study, jasmine aromatherapy was also proven to be effective in reducing pain in the first stage of labor, seen changes before and after the jasmine aromatherapy intervention experienced a decrease in pain scores. This proves that giving jasmine aromatherapy can help relieve pain experienced by mothers in labor.

In line with previous research that jasmine aromatherapy can reduce pain in the first stage, it was explained that jasmine aromatherapy was given by means of counter pressure massage to the mother's back, because jasmine oil is a uterine tonic that has been used traditionally as an aid in childbirth and jasmine oil has high content of antidepressants, namely linalool(Mukhlis et al., 2018)

### **CONCLUSION AND RECOMMENDATION**

There was a significant effect of the results of the first stage of labor pain before and after the lavender and jasmine aromatherapy intervention period, which was -4.143 and a significant value of 0.000 ( $p < 0.000$ ). Pregnant and maternity mothers can use lavender and jasmine aromatherapy to reduce pain so that the delivery process can run smoothly. Health workers can use lavender and jasmine aromatherapy as a non-pharmacological

method that is easy and practical to reduce labor pain. The results of this study are expected to be input for clinics in the management of active phase 1 labor pain with non-pharmacological methods that can be applied in the clinic using lavender and jasmine aromatherapy. This research is expected to be used as a material or reference for further research, besides that it can use a pain measuring device that is more effective and can be done since the first stage of the latent phase. Future researchers are also expected to be able to control confounding, sample size and statutory analysis

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