

LINALOOL IN LAVENDER AROMATHERAPY REDUCE LABOR PAIN

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ABSTRACT

Labor is the time that pregnant women look forward to experience and feel happiness. In labor there are uterine contractions that cause pain, although pain is a physiological process, if not treated immediately it will have a negative impact on the mother and baby. This study aims to reduce pain during the first stage of the active phase of labor. In the journal tracking methodology section, Aromatherapy Lavender pain Labor with Boolean operators used for this journal search are "OR" and "AND". The data sources used for related journal searches are PubMed and Google Scholar. In the search for journals on E-Data based, it is limited to 10 years of publication, which is in the range of 2012 to 2022. The pain scale was obtained after the pretest, when the mother experienced contractions, which was on a scale of 4 (moderate pain). Meanwhile, after being given the intervention, namely giving lavender aromatherapy for 60 minutes, a posttest was carried out after 30 minutes, a pain scale of 3 (mild pain) was obtained, which means that there is an effect of giving lavender aromatherapy to the reduction of labor pain in the first stage of the active phase in maternity. Lavender aromatherapy can reduce labor pain in the active phase of the 1st stage because it contains linalool and eklephalin which can reduce pain naturally. Therefore, it is better for mothers who will give birth to choose lavender aromatherapy as an alternative that mothers can choose to reduce pain during labor.

INTRODUCTION

Labor is the time that pregnant women look forward to because they gain experience and will meet their future baby. On the other hand, during childbirth, there are often obstacles that can affect the health of both mother and baby. In labor there are uterine contractions that cause pain, even though pain is a physiological process, if not treated immediately it will have a negative impact on the mother and baby (Novita et al. 2021).

The condition of labor pain makes birth mothers prefer the fastest way to relieve pain. One of them is by performing a Caesarean section without clear indications. It is very important to know, in fact delivery by cesarean section also causes pain that appears after delivery. In particular, pain is suffered in the abdominal area. In addition, in cesarean delivery there is a possibility of mothers

experience complications such as infection, fever to sepsis (Yazdkhasti and Pirak 2016).

Every mother has a different response in the face of childbirth. Several factors that can affect the response to labor pain are parity, age, knowledge, race, culture, past pain experience and environment (Rohimah and Utami 2021). Various efforts are needed in order to reduce labor pain and prevent complications in the mother and fetus during the delivery process. Some methods that mothers can choose are pharmacological methods and non-pharmacological methods (Imelda and 2022 2022). One method that can reduce labor pain is aromatherapy. Aromatherapy is a complementary therapy that involves the use of fragrances derived from essential oils (Abbasijahromi et al. 2020).

Aromatherapy can also be used to reduce labor pain during labour. This is because aromatherapy is able to provide a calming sensation for oneself and the brain, as well as

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the stress that is felt (Sanjaya et al. 2020). Lavender aromatherapy used As This aromatherapy contains linalool (Tabatabaeichehr and Mortazavi 2020). Linalool is the main active ingredient that contributes to lavender's anti-anxiety (relaxation) effect. The fragrance produced by lavender flowers will stimulate the thalamus to secrete enkephalin, which functions as a natural pain reliever (Maharani and Surani 2022). Enkephalin is a neuromodulator that functions to inhibit physiological pain. Enkephalins are the same as endorphins that are produced naturally by the body and has the ability to inhibit pain transmission, so that pain is reduced (Yazdkhasti and Pirak 2016). This study wants to know the evidence based on implementing labor pain reduction in Active Stage I by using Lavender Aromatherapy..

METHOD

A. CASE

A pregnant woman named Mrs. L, 39 years old, G6P4A1 at 38 weeks of gestation, came to the Garuda Health Center at 05.00 PM with complaints of heartburn more often accompanied by mucus mixed with blood from the birth canal. The results of the internal examination showed that there were no abnormalities in the vaginal vulva, soft thin portion, 6 cm dilatation, intact membranes, head presentation, hodge II, front left UUK, molasses 0 which indicates the mother has entered the active phase and the single fetus is alive intrauterine.

B. Problem Formulation

PICO

- P : Mothers giving birth in active phase I who experience labor pain.
I : Lavender Aromatherapy.
C : No comparison or other intervention.
O : Success gives LavenderAromatherapy on the reduction of pain experienced by pregnant women during the active phase I.

Is there any influence from Lavender Aromatherapy to the decrease in the level of pain experienced by pregnant women during the active phase I?

C. Methods

In the methodology section of this journal, the following are: Aromatherapy Lavender pain Labor with Boolean Operators used for searching this journal are "OR" and "AND". The data sources used for related journal searches are PubMed and Google Schler. In journal browsing on E-Data based limited to 10-year publications, i.e. in the range of 2012 to the latest publication in 2022.

The inclusion and exclusion criteria for articles, namely, in searching journals on E-Data based, the journals used are those that meet the inclusion criteria, namely publications in the last ten years (2012-2022), full text, research design is clinical trial, in English or Indonesian. There are several articles from the search results. The first selection is based on the availability of full text, elimination of articles from the last 5 years, title/abstract. The remaining articles were reviewed based on the inclusion criteria. There are 2 articles that match the clinical questions of this evidence-based case report.

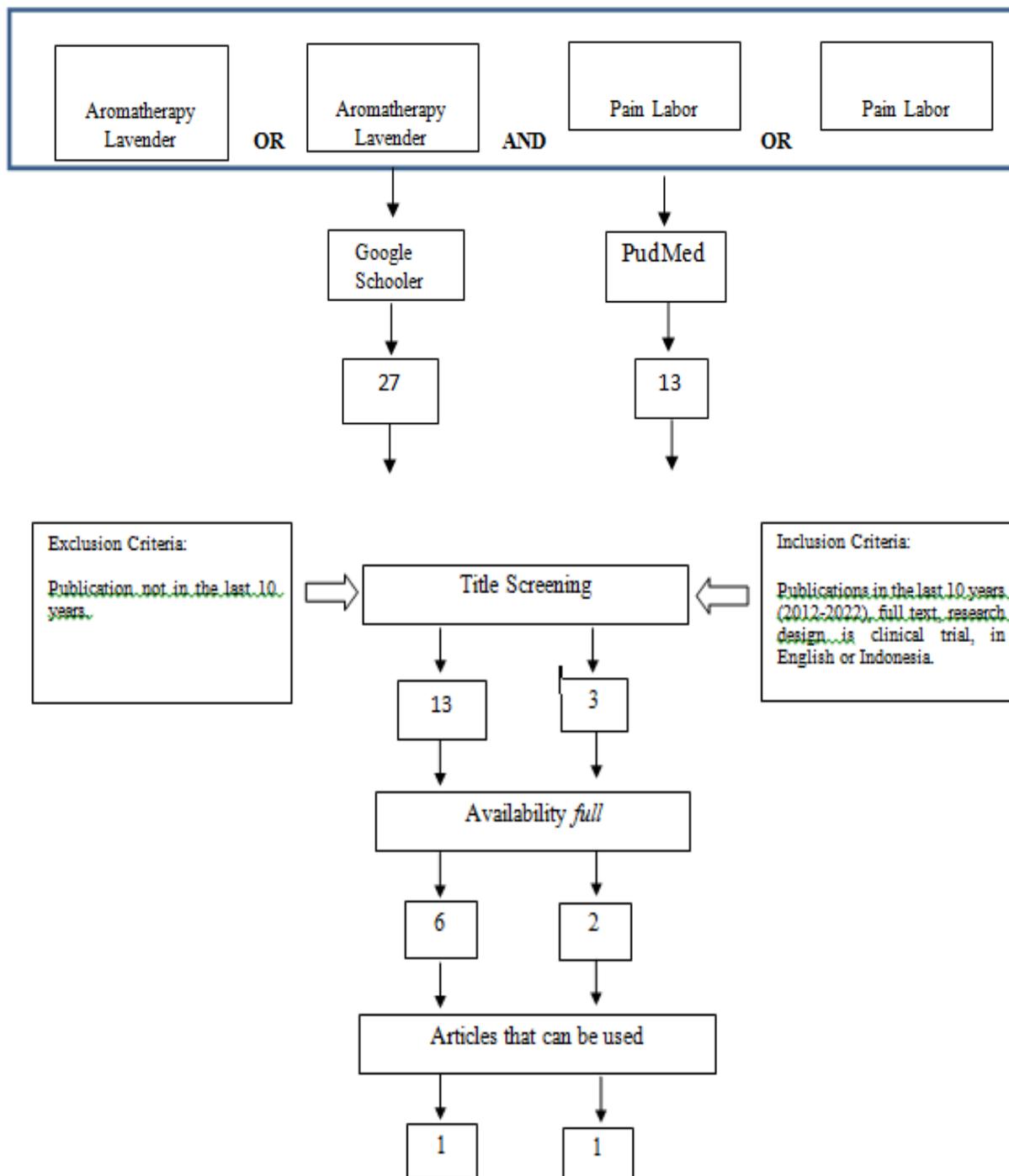


Figure 1. Literature selection flowchart

Table 1. Critical Study

Article	Desain Penelitian	Level of evidence	Validity	Importance	Applicability
giving Aromatherapy Lavender To Subtraction Painful Labor Stage I Phase Active 2021. Witama Juliani, Riona Sanjaya, Septika Yani Veronica, Hikma Ifayanti. Journal Wellness And Healthy Magazine. Source: Google Schooler.	this research Use one design pretest group-posttest design .	1b	Study this use design one group pretest-posttest design. This research was conducted from March-April 2021. Number of samples in this research There are 16 mothers giving birth during the 1st active phase who experienced pain in the Public Health Center Raman North Regency East Lampung. Inclusion Criteria: Mother Primipara and multipara, stage I active phase (4-10 cm opening), Mother normal maternity without Complications which accompany, ready Becomes respondents. Criteria exclusion no listed in the journal. Mothers giving birth in the first active phase are given pretest-posttest to know the painful standard before giving intervention and after giving intervention. Giving lavender aromatherapy for 60 minutes as much as 3-5 drops. With evaluation standard pain level.	<ul style="list-style-type: none"> At 16 respondent before given scent therapy lavender obtained average level painful labor when 1 phase active 7.19 with standard deviation 1,601, scales painful minimum 4 and scale painful max 9 and from 16 respondents. After given lavender scent therapy obtained average level painful labor when 1 phase active 5.50 with standard deviation 1,932, scales Painful minimum 2 and scale pain maximum 9. Average painful before given lavender scent therapy Obtained 7.19 with a standard deviation of 1.601. Whereas after given lavender scent therapy Obtained 5.50 with a standard deviation of 1.932. The results of the paired sample t-test obtained p-value 0.000 <0.05 which means there is influence gift aromatherapy lavender to subtract painful delivery time I phase active on mother maternity in working area Public health center North Raman Regency Lampung East year 2021. 	Aromatherapy lavender works with influence not only on a physical level but also on an emotional level. The content of lavender oil consisting of linalool, linalylacetate and 1.8 – cincole can lower, loosen up and relax spontaneously the tension of someone who experiences muscle spasms. intervention This could easily be given to mother Maternity to painful stage I active phase at the Health facility in Indonesia.
The effect of aromatherapy with lavender essence on severity of labor pain and duration of labor in primiparous women. Mansoreh Yazdkhasti a , Arezoo Pirak. Elsevier. Source: PudMed.	Metode dalam jurnal penelitian ini menggunakan metode RCT.	1a	The single-blind, randomized clinical trial was conducted from September 2012. The study was performed at the Iran Hospital in Iranshahr city (Sistan-Balouchestan province, Iran). The study population comprised all women referred to this hospital for childbirth at the time of data collection. The eligibility criteria included nulliparous pregnant women with singleton pregnancy, gestational age over 37 weeks, cervical dilation greater than 3-4 cm, cephalic presentation and receiving no analgesia during labor. Exclusion criteria were set as follows: cephalopelvic disproportion, the subject's withdrawal from the clinical trial, history of allergy to herbs, factors leading to an emergency caesarean section and diagnosis of underlying diseases in the mother. Pain level was measured using scale painful analog visual. VAS is 0-10 ruler rating painful in where respondent choose number which by accurate represent flavor the pain. 60 pregnant women on group experiment and 60 pregnant women in the group control. Data were analyzed with SPSS (Statistical Package for social Science, version 20) using descriptive statistics (mean, standard deviation and percentage), and analytical tests (Chi-square independent t-test, paired t-test and kolmogoroveSmirnov test)..	<p>The first assessment, pain was performed before intervention (dilatation 3-4 cm) in both control and experimental groups using the visual analog pain scale. The VAS is a 0-10 pain rating ruler in which the respondent selects a number that accurately represents her pain.</p> <p>The lavender essence was made with <i>Lavandula angustifolia</i> and was produced by the Barij Essence Pharmaceutical Company (Kashan, Iran). Given that pure lavender essence is highly concentrated and can cause irritation, the essence was diluted 1:10 with distilled water. In the experimental group two droplets of lavender essence 10% was diluted with distilled water 1:10.</p> <p>A dropper was used to drop the essence on to the patient's palm, then they were asked to rub their hands together and inhale the inhale the scent for 3 min while the hands were 2,5-5 cm distance from the nose. Aromatherapy with lavender essence was performed by the second researcher (A.P) who is an expert midwife. The pain intensity of the subjects was measured 30 min after the contraction ended.</p> <p>The intervention was carried out in 3 phases (dilation 5-6, 7-8, and 9-10 cm). Pain intensity of the subjects in the experimental group was assessed before and 30 min after the three phase intervention while the subjects in the control group were treated with distilled water as a placebo in a similar way. The length of active phase and the second stage of labor, neonates Apgar scores in the first and fifth minutes in both study groups were measured and compared.</p>	Aromatherapy used is lavender. Intervention this could with easy given to mother maternity to painful stage I active phase at the facility health in Indonesia.

RESULT AND DISCUSSION

A. RESULTS

On Wednesday, April 13, 2022, Mrs. L with her husband came to the Garuda Health Center at 21.00 WIB. After taking an anamnesis, Mrs. L complained of having heartburn and mucus mixed with blood since 17.00 WIB. After that, an objective examination was carried out including blood pressure, pulse, temperature, respiration and the results were normal. Subsequently, an internal examination was carried out and it was found that the opening was 6 cm. When the mother experiences contractions, the assessor conducts a pretest assessment without informing the mother in advance that she will be offered a pain reduction intervention. After that, the pretest and posttest were carried out to reduce the existing bias. The pretest was carried out with an objective assessment such as seeing and asking the patient's condition and the complaints felt during the contractions. At the time of the assessment, the results of the pretest were obtained, namely, moderate pain (4) which objectively during the assessment the mother was able to follow orders well. Mother hisses in pain, grins and can show the location of the pain that she feels and can describe the pain she feels.

After carrying out the assessment, the assessor gave informed consent with the patient, namely by offering and informing the mother about the use and workings of Aromatherapy Lavender in active phase 1 maternity which can reduce the pain felt by the mother when the contractions come. After being given an explanation about how to use and benefit from Aromatherapy Lavender, the mother was willing to be given intervention. Mother inhales Lavender Aromatherapy by using a diffuser that works by spraying lavender aromatherapy in the mother's room. So that the aroma is inhaled through the mother's nose

from the aroma of the room (Novita et al. 2021)

The position chosen is left tilted or a position that is comfortable for the mother. Giving aromatherapy for 60 minutes. At the time of the intervention the author accompanied the mother. Furthermore, conducting a post test assessment after 30 minutes of being given the intervention. Mother looks more comfortable and can enjoy experienced contractions and is able to communicate better than before the intervention. Objectively can communicate well so that after the post test assessment, maternal pain is classified as mild intensity (3). Mothers were given one session of intervention, which was 60 minutes..

In implementing the intervention, the reviewer has limitations, because the VK room is wider than the rules listed in the journal, causing the reviewer to close the screen curtain. The goal is that more aromatherapy can be smelled by respondents. In addition, as much as possible the aromatherapy diffuser is placed not far from the patient's bed. Although there are limitations, the reviewer is very grateful because the patient can be invited to work together and be communicative at the time of the intervention.

Based on the journal giving lavender aromatherapy on reduction of labor pain in the active phase I got the results, 16 respondents before being given lavender aromatherapy the average level of labor pain in the active phase 1 was 7.19 with a standard deviation of 1.601, a minimum pain scale of 4 and a maximum pain scale of 9 out of 16 respondents.

After being given lavender aromatherapy, the average level of labor pain in the active phase 1 was 5.50 with a standard deviation of 1.932, a minimum pain scale of 2 and a maximum pain scale of 9. The average pain before being given lavender aromatherapy was 7.19 with a

standard deviation of 1.601. Meanwhile, after being given lavender aromatherapy, it was 5.50 with a standard deviation of 1.932. Paired test results sample t-test obtained p value $0.000 < 0.05$, which means that there is an effect of giving lavender aromatherapy on reducing labor pain in the first stage of the active phase in women giving birth.

Research conducted by Pebi Nelia Sari (2020) showed that there was a significant difference between giving aromatherapy to pain in childbirth with a p value of 0.000. There is a decrease in pain scale after being given lavender aromatherapy because it smells good. The aromatherapy produced by lavender stimulates the thalamus to secrete enkephalins, which act as natural pain relievers.

Research by Eby Juliana Sabima (2020) which shows that there is an effect before and after giving lavender aromatherapy to menstrual pain, the p value is 0.000.

From various research results that have been carried out using lavender aromatherapy, it is found that giving lavender aromatherapy can reduce labor pain. This response is due to lavender aromatherapy containing linalool as a relaxing compound that can help reduce labor pain. The cause of reduced heartburn is not only aromatherapy, but also supported by family support and helpers who will further optimize the effect of reducing pain.

After doing research by giving lavender aromatherapy for 60 minutes at 4 cm opening there is a decrease in pain and some there is no decrease in pain intensity, at 6 cm opening there is a decrease in pain intensity, at 7 cm opening there is a decrease in pain and there is also no decrease in pain intensity.

Preferably, mothers who are about to give birth can choose aromatherapy as an alternative that mothers can choose to reduce pain during labor and support from their

husbands, families and midwives is also very much needed during the delivery process.

B. DISCUSSION

Lavender comes from the word lavender which means refreshing. Lavender contains linalool alcohol, ketones and stearaldehyde. The ketones in lavender can reduce pain, inflammation and soothe, while the esters can prevent muscle spasms, reduce tension and depression (Patimah and Sundari 2020).

Linalool is the main active ingredient that contributes to lavender's anti-anxiety (relaxation) effect. The fragrance produced by lavender flowers will stimulate the thalamus to release enkephalin, which functions as a natural pain reliever (Maharani and Surani 2022). Enkephalin is a neuromodulator that functions to inhibit physiological pain (Tabatabaeichehr and Mortazavi 2020). Enkephalins are the same as endorphins that are produced naturally by the body and have the ability to inhibit pain transmission, so that pain is reduced (Yazdkhasti and Pirak 2016).

On the application Evidence Base Care Report for the application of pain reduction in maternity mothers during the active phase I. Research conducted by Witama Juliani, Riona Sanjaya, Septika Yani Veronica, Hikma Ifayanti (2021), which in this study used the VAS instrument (Visual Analogue Scale) and a pretest posttest was performed before and after being given the lavender Aromatherapy intervention for 60 minutes (Sanjaya et al. 2020).

In this case, based on the anamnesis that has been done, the mother admitted to feeling moderate pain during the first stage of the active phase of labor. After measuring, the level of pain using the Visual Analogue Scale (VAS) a pain scale of at least 4 and a maximum pain scale of 9 before the intervention was given. Meanwhile, after

being given an intervention, the pain scale is at least 2 and the maximum pain scale is 9 (Sanjaya et al. 2020).

Mothers with active phase I labor were carried out by direct observation. It is known, the mother looks unable to stand the pain that is felt. The mother looks moaning, crying by stating that she is not strong enough for the midwife who helps the delivery process. Mothers during the first stage of active labor feel pain, professional students are asked to rest and take a deep breath, without giving pain-reducing drugs (Sanjaya et al. 2020).

After done pre-teston the mother and the results showed that the mother experienced moderate-intensity pain (4) during the first stage of the active phase. Furthermore, given an intervention with Aromatherapy Lavender for 60 minutes. Posttest using Visual Analogue Scale done after 30 minutes. Mother said that the pain has decreased slightly, after previously being at number 4. Post-test results The level of maternal pain is classified as mild at number 3. This indicates that the mother experienced a decrease in the level of pain after the intervention.

By using new non-pharmacological methods, the whole process of giving birth becomes a pleasurable experience, reducing the mother's tendency to cesarean sections (Sagita and Martina 2020). On the other hand, non-pharmacological interventions have no side effects on mother and baby and do not require a doctor's prescription. They are also a viable alternative to pharmacological approaches. The use of aromatherapy is part of developing the application of evidence based in supporting midwifery care that encourages normality and provides positive experiences for women (Sanjaya et al. 2020).

CONCLUSION

Linalool in lavender aromatherapy can reduce labor pain. Therefore, it is better for mothers who are about to give birth to choose lavender aromatherapy as an alternative that mothers can choose to reduce pain during labour.

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REFERENCE

- Abbasijahromi, Ali, Hamed Hojati, Saeid Nikooei, Hossein Kargar Jahromi, Hamid Reza Dowlatkhah, Vahid Zarean, Mehran Farzaneh, and Arefeh Kalavani. 2020. "Compare the Effect of Aromatherapy Using Lavender and Damask Rose Essential Oils on the Level of Anxiety and Severity of Pain Following C-Section: A Double-Blinded Randomized Clinical Trial." *Journal of Complementary and Integrative Medicine* 17(3):1–14.
- Imelda, NL Rambe-Scientific Journal of Midwifery, and Undefined 2022. 2022. "The Effect of Lavender Aromatherapy on Reducing Labor Pain: A Systematic Review." *Jurnal.Uimedan.Ac.Id* 8(1):2442–8116.
- Maharani, A. R., and E. Surani. 2022. "Influence Giving Lavender Aromatherapy to Reducing Dysmenorrhea Pain." ... "(*Journal of Health Research*" *Forikes* ... 2(3):1–11.
- Novita, N., D. Setiawati, O. Fiesta-Journal Of, and Undefined 2021. 2021. "Reduction of First Stage of Labor Pain With Lavender Aromatherapy." *Jurnal.Poltekkespalembang.Ac.Id*.
- Patimah, Meti, and Sri Wahyuni Sundari. 2020. "Aromatherapy To Reduce Labor Pain." *Proceeding Book Health National Conference "Stunting Dan 8000 Hari*

Pertama Kehidupan” 45–48.

- Rohimah, Siti, and Iis Tri Utami. 2021. “Giving Lavender Aromatherapy on Reducing Intensity of Labor Pain in Active Phase I in Primiparous.” *Jurnal Human Care* 6(2):416–22.
- Sagita, Yona Desni, and Martina. 2020. “Giving Lavender Aromatherapy To Reduce The Intensity of Labor Pain.” *Journal Wellnes* 2(2):309–13.
- Sanjaya, Riona, SeptikaYani Veronica, and Hikmah Ifayanti. 2020. “The Provision of Lavender Aromatherapy for Reduction of Childbirth Pain in Active Phase I.” *Wellness And Healthy Magazine* 2(2):187–92.
- Tabatabaeichehr, Mahbubeh, and Hamed Mortazavi. 2020. “The Effectiveness of Aromatherapy in the Management of Labor Pain and Anxiety: A Systematic Review.” *Ethiopian Journal of Health Sciences* 30(3):449–58.
- Yazdkhasti, Mansoreh, and Arezoo Pirak. 2016. “The Effect of Aromatherapy with Lavender Essence on Severity of Labor Pain and Duration of Labor in Primiparous Women.” *Complementary Therapies in Clinical Practice* 25:81–86.