



Combination of Slow Deep Breathing Technique and Lavender Aromatherapy on Labor Pain Intensity Period I Active Phase in Maternity Patients Primipara at dr. Abdul Rivai Berau Hospital

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ARTICLEINFO	ABSTRACT
<p>Article history:</p> <p>Received Mar 09, 2024 Revised Mar 12 2024 Accepted Mar 14, 2024</p> <hr/> <p>Keywords:</p> <p>Lavender Aromatherapy; Labor Pain; Primipara; Slow Deep Breathing.</p>	<p>Labor pain in the first stage of the active phase felt by primiparous mothers at dr. Abdul Rivai Hospital is like a strong and very scary stab, and in facing labor pain, primiparous mothers do not know how to deal with the pain they feel, so some primiparous mothers are agitated, screaming, hitting their husbands, asking for a Caesarean section without medical indication. This study aimed to determine the effect of the combination of the Slow Deep Breathing technique and lavender aromatherapy on the intensity of labor pain during the first active phase in primiparous mothers giving birth. The Study used pre-experimental methods and a group Pre-Test-Post-Test Design with a population of primiparous mothers giving birth at Dr Abdul Rivai Hospital, Berau Regency, with an average of 43 people per month, based on the Lameshow formula with a sample of 35 people. The research instrument uses the NRS scale. Data analysis used the Wilcoxon test. The score for labor pain in the first stage of the active phase before the combination of the Slow Deep Breathing technique and lavender aromatherapy carried was 8, and after the combination of the Slow Deep Breathing technique and lavender aromatherapy was 7. There is an effect of the combination of the Slow Deep Breathing technique and lavender aromatherapy on the intensity of labor pain in the active phase of the first stage in primiparous women giving birth (p-value = 0.000 < α: 0.05). This indicates that the combination of the Slow Deep Breathing technique and lavender aromatherapy influences reduces the intensity of labor pain during the first active phase in primiparous women giving birth.</p> <p style="text-align: right;"><i>This is an open access article under the CC BY-NC license.</i></p>



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1. Introduction

Normal childbirth is not a dangerous event, but in some cases it can be a time full of pain, fear, suffering and even death.(Manuaba, 1998). Pain during labor is a clinical manifestation of the uterine muscles contracting in an effort to open the birth canal and press the fetus towards the pelvis(Sari et al., 2018).

Labor pain that occurs continuously, longer and more often has the potential to make the mother restless and anxious (Ayu & Supliyani, 2019).

Data on labor pain in Finland shows that 80% of women describe labor pain as very intense and unbearable. Research reports in Australia include labor pain in women depending on each opening, with 0-3 cm opening being moderate pain, 4-7 cm opening being severe pain and opening > 8 cm being unbearable (Sari, et al, 2020). Research in the UK shows that 93.5% of women described the pain as unbearable (Rahmawati et al., nd). According to the 2017 Indonesian Demographic and Health Survey (SDKI), it was reported that 53.5% of births were accompanied by anxiety or severe pain. (Hariyanti & Astuti, 2021). The results of research in Indonesia reported that of 100% of mothers who gave birth, only 30% were able to overcome the pain during childbirth. Statistically, 2 out of 3 mothers in labor cannot tolerate pain (Maryati & Nursitiharoh, 2023). Data on labor pain in the 1st active phase based on research results at a clinic in East Kalimantan Province showed that 80% of respondents said they experienced severe pain (consisting of 60% primiparas and 20% multigravidas) (Pasiriani & Juniawati, 2020). Likewise, in subsequent research, the intensity of pain in the first stage of labor in the active phase in primiparous mothers with an average score of 7.92 (severe pain) (Muzayyana & Waroh, 2023). This data shows that labor pain during the first active phase is higher in primiparous mothers.

The progress of the first stage of labor in the active phase in primiparas is influenced by cervical dilatation and descent of the fetal head to the pelvic floor. Labor pain is caused by contractions that occur regularly with intensity that gets stronger and more frequent over time. The progress of labor in the first stage of the active phase is the most tiring, difficult time, and most mothers start to feel pain or pain because the uterus begins to become more active. Mothers will feel discomfort and pain as labor progresses (Dina et al., 2023).

The pain felt by the mother can cause several negative impacts, such as disturbed maternal psychology or stress which causes the release of catecholamine and steroid hormones, which can cause smooth muscle tension and vasoconstriction of blood vessels, decreased uterine contractions, decreased utero-placental circulation, reduced blood and oxygen flow. to the uterus, as well as uterine ischemia which causes an increase in the number of pain impulses. Unresolved labor pain can also cause changes in blood pressure, heart rate and levels of sympathetic nervous system activity (Wijayanti et al., 2019). If labor pain is not managed with good pain management, it will cause prolonged labor and cause bleeding in the mother and in turn will result in asphyxia for the baby and can cause death in the mother and baby. (Rachmawati Ika et al., nd).

Pain management during childbirth is very important because it will improve the physiological and psychological condition of the mother and newborn and reduce maternal and fetal deaths. In addition, managing pain during labor can reduce the incidence of caesarean sections without medical indications (Nufra & Azimar, 2019). One effort to help with childbirth is to explore and apply pain reduction methods (Azizah et al., 2021). There are many ways to deal with labor pain using both pharmacology (drugs) and non-pharmacology. Non-pharmacological methods are divided into 2 strategies, namely relaxation strategies and comfort strategies. Relaxation strategies include mediation, affirmations, visualization, breathing and hypnobirthing. Comfort strategies include aromatherapy, water therapy or hydrotherapy, hot and cold therapy, massage, effleurage, acupressure, counterpressure, hip squeeze, knee press, TENS or Transcutaneous Electrical Nerves Stimulation. However, the various non-pharmacological therapies, for example mediation, hypnobirthing, massage, effleurage, acupressure, counterpressure, hip squeeze, knee press, TENS or Transcutaneous Electrical Nerve Stimulation, have weaknesses such as needing a therapist. (Suyani, 2020).

One technique that can be used to overcome the pain of labor during the first active phase in a simple, practical way that midwives can use is using a combination of slow deep breathing techniques and lavender aromatherapy. The slow deep breathing technique is a relaxation technique by taking deep breaths, slow breaths (inhaling slowly to the maximum) and exhaling slowly. The effect of slow deep breathing can make respondents relax and can reduce stress levels. A relaxed atmosphere can increase endorphin hormones which function to inhibit the transmission of pain impulses along sensory nerves from peripheral nerve nociceptors to the cornudorsalis then to the thalamus, cerebrum which

results in decreased pain perception. Endorphins and enkephalins produced when slow deep breathing function as neuro transmitters that can bind to opiate receptors at the ends of efferent pain fibers. This binding will suppress the release of substance P (neuropeptide) through presynaptic inhibition, so that pain transmission can be hampered (Naristiyanti, 2023).

Apart from that, aromatherapy is therapy or treatment using odors that come from plants, flowers and trees that smell fragrant and delicious. Essential oils are used to maintain and improve health and well-being, often combined for a soothing healing touch with the therapeutic properties of essential oils (Buckle, 1999). The type of aromatherapy oil that is commonly used is lavender (Judha & Syafitri, 2018).

Lavender aromatherapy contains linalool and linalyl acetate which can stimulate the parasympathetic nerves and have a sedative effect. The aromatherapy content of lavender will block the flow of sodium in the nerve fibers that transmit pain, thereby blocking pain messages and producing a calming effect. (Utami, 2013). Lavender aromatherapy has advantages compared to other aromatherapy in terms of anxiety and pain levels. A study conducted by the National Institute in Japan showed that the linalool compound found in lavender oil exhibits anti-anxiety and anti-pain effects. (Andriana, 2019).

To use lavender aromatherapy, you can use a tissue dripped with 3 drops of lavender essential oil, which is inhaled for 15 minutes (Sawati et al, 2023), at a distance of 10 cm (Rahmayani & Machmudah, 2022) and on tissue or gauze measuring 10x10 cm which is placed towards the birthing mother. The use of lavender aromatherapy using tissue is practical, simple, efficient and does not require tools or electricity, so it can be practiced independently by the patient (Meti & Sri Wahyuni, 2020).

Previous research conducted (Fitri et al., 2019) shows that there is a relationship between deep breathing techniques and reducing pain intensity during the first active phase. Study (Susanti & Andriani, 2023) shows that there is an influence of relaxing breathing on the level of pain in mothers giving birth. Study (Yakoeb et al., 2022) shows that giving lavender aromatherapy is effective in reducing labor pain. The similarity with previous research in the dependent variable is the intensity of labor pain. The difference in previous research was the type of quasi-experimental research, the intervention was given by slow deep breathing techniques or lavender aromatherapy only. In the research that will be carried out, the type of pre-experimental research, the intervention carried out is a combination of slow deep breathing techniques and lavender aromatherapy, a sample of primiparous mothers giving birth.

Preliminary study of birth data at RSUD dr. Abdul Rivai Berau from January to September 2023 there were 1,854 women giving birth, there were 1,223 normal births and 358 primipara normal births, so the average primipara normal birth each month was 43 people (Wahyuli & Risnawati, 2023). Data on labor pain during the first active phase at RSUD dr. Abdul Rivai is not specifically recorded every month, but the patient's pain data is contained in the patient's medical record sheet.

The results of observations and anamnesis carried out by researchers in November 2023 at RSUD dr. Abdul Rivai Berau in 10 primiparous mothers during the first active phase said pain in the abdomen, waist, back and radiating to the spine. There were 3 people who said the pain was like stabbing and the pain made the mother unable to focus, causing her to be less able to communicate well. A total of 7 people said that the pain they felt was so strong, and felt so terrible, that it caused primiparous mothers to be unable to communicate well, so they felt anxious about not being able to go through the normal delivery process, the mothers also seemed anxious during the birthing process, so most of the mothers gave birth. Primiparas request a caesarean section (SC). In dealing with labor pain in the active phase of the first stage at RSUD dr. Abdul Rivai, a primiparous birthing mother, did not know how to deal with the pain she was feeling, so during the pain the primiparous birthing mother screamed, cried, and hit her husband.

Management of labor pain in the first active phase of labor in primiparous mothers at RSUD dr. Abdul Rivai Berau has never used non-pharmacological methods and there is no SOP for non-pharmacological therapy to treat this pain. If a patient complains of unbearable pain, the midwife only asks the patient to take long, deep breaths, so there are no guidelines for dealing with labor pain during the first stage of the active phase in primiparous mothers. Seeing this problem, researchers were interested in applying a combination of slow deep breathing techniques and lavender aromatherapy to

primiparous women in labor to overcome pain during the active phase of first stage labor at RSUD dr. Abdul Rivai Berau. This study proposes an innovative research approach, namely the combination of slow breathing techniques and lavender aromatherapy, to manage labor pain in primiparous mothers. It makes a novel contribution to the literature on labor pain management and demonstrates the diversity of strategies that can be used.

2. Research Methodology

This research design uses a One Group Pre-Test – Post-Test Design. The population in this study were primiparous maternal patients at RSUD dr. Abdul Rivai, Berau Regency in January-September 2023 numbered 385 people with an average of 43 people per month. At the time of the research there were 37 respondents willing to be given the intervention, however at the time of the research there were 2 people who did not complete the intervention because they did not like it. Lavender aromatherapy and was included in the exclusion criteria, so the research sample was 35 people. Data analysis using a quantitative approach includes Univariate Analysis, Normality Test, Bivariate Analysis using SPSS 23.

3. Results and Discussions

3.1 Univariate Analysis

Labor pain score in the first active phase before the combination of the Slow Deep Breathing technique and lavender aromatherapy was carried out in primiparous women giving birth at RSUD dr. Abdul Rivai Berau. Identify the average score of labor pain in the first active phase before the combination of the Slow Deep Breathing technique and lavender aromatherapy in primiparous women giving birth at RSUD dr. Abdul Rivai Berau, can be seen in the following table:

Table 1. Labor pain scores in the first active phase before the combination of the Slow Deep Breathing technique and lavender aromatherapy in primiparous women giving birth at RSUD dr. Abdul Rivai Berau

Score	f	Median	Minimal	Maximum	Std. Deviation
Pre-test	35	8	5	10	1,262

Source: Primary Data, 2024

3.2 Labor pain score in the first stage of the active phase after a combination of the Slow Deep Breathing technique and lavender aromatherapy in primiparous women giving birth at RSUD dr. Abdul Rivai Berau.

Identify the average score of labor pain in the first stage of the active phase after a combination of the Slow Deep Breathing technique and lavender aromatherapy in primiparous women giving birth at RSUD dr. Abdul Rivai Berau, can be seen in the following table:

Table 2. Labor pain scores in the first active phase after a combination of the Slow Deep Breathing technique and lavender aromatherapy in primiparous women giving birth at RSUD dr. Abdul Rivai Berau

Score	f	Median	Minimal	Maximum	Std. Deviation
Post test	35	7	4	9	1,314

3.3 Bivariate Analysis

Analysis of the effect of the combination of the Slow Deep Breathing technique and lavender aromatherapy on the intensity of labor pain in the active phase of the first stage in primiparous women giving birth at RSUD dr. Abdul Rivai Berau, based on non-parametric bivariate analysis used is the Wilcoxon test, which can be seen in the table below:

Table 3. Effect of the combination of the Slow Deep Breathing technique and lavender aromatherapy on the intensity of labor pain in the first active phase of labor in primiparous women giving birth at RSUD dr. Abdul Rivai Berau

Variable	N	PositiveRank	Negative Ranking	Ties	Sig	Z
Pretest - Posttest	35	0	30	5	0,000	-4,940

3.4 Discussion

a. Labor pain score in the first active phase before the combination of the Slow Deep Breathing technique and lavender aromatherapy was carried out in primiparous women giving birth at RSUD dr. Abdul Rivai Berau

Based on the research results, it is known that the labor pain score in the first active phase before the combination of the Slow Deep Breathing technique and lavender aromatherapy was carried out in primiparous women giving birth at RSUD dr. Abdul Rivai Berau with a median value of 8, minimum value of 5, maximum value of 10 and standard deviation of 1.262. Research result This is in accordance with Fitri's research (2019) who were given intervention. Study (Dwiutami & Indrayani, 2022) indicates that the pain score is moderate) or very distressing. Meanwhile, in this study, patients with moderate and severe pain were given intervention.

Study (Octavia, nd) show that score pain score 7 or severe pain. Likewise, in this study, labor pain during labor was intense. This is due to research previous and this research in taking respondents by considering the severity of pain scale given the intervention.

Childbirth is a series of events where a baby is released from the mother's womb, followed by the release of the placenta and fetal membranes from the mother's body, where the first stage begins with regular and increasing hyssis (frequency and strength) which causes opening, until the cervix opens completely. (10cm) (Yuni & Widi, 2018). Pain during labor is a clinical manifestation of the uterine muscles contracting in an effort to open the birth canal and press the fetus towards the pelvis (Sari, et al., 2018).

Labor pain can be caused by several factors, including experience and knowledge about pain. Previous experience such as previous births will help overcome pain because the mother already has coping skills for pain (Andarmoyo, 2013). Likewise, maternal self-confidence in childbirth is defined as a mother's confidence in her ability to overcome the pain she feels so that the mother can control and overcome her pain naturally so that the labor process can take place smoothly (Sari in (Choirunissa et al., 2021). This influence is caused by previous experiences felt by multigravida mothers, where this experience is one of the factors that can cause the intensity of pain felt by different individuals (Sudjito, 2018).

Apart from that, maternal age is also used as a factor to determine pain tolerance. According to research, age influences the intensity of labor pain, in other words, mothers who are still young or vice versa (<20 years or >35 years) will cause an excessive anxiety response. (Afritayeni, 2017).

Researchers assume that the labor pain score in the first stage of active phase before the combination of the Slow Deep Breathing technique and lavender aromatherapy was carried out in primiparous women giving birth at RSUD dr. Abdul Rivai Berau with a score of 8 which includes severe pain.

b. Labor pain score in the first stage of the active phase after a combination of the Slow Deep Breathing technique and lavender aromatherapy in primiparous women giving birth at RSUD dr. Abdul Rivai Berau

Based on the research results, it is known that the labor pain score in the first stage of the active phase after a combination of the Slow Deep Breathing technique and lavender aromatherapy in primiparous women giving birth at RSUD dr. Abdul Rivai Berau with a median value of 7, minimum value of 4, maximum value of 9 and standard deviation of 1.314. This shows that there was an increase in the average score of labor pain in the first active phase after the combination of the Slow Deep Breathing

technique and lavender aromatherapy in primiparous women giving birth at RSUD dr. Abdul Rivai Berau is 1.23.

The results of this study are in accordance with Fitri's (2019) research including moderate and severe scales. Gusti's research (2021) shows that the level of pain in mothers is mild at 44.4%. In contrast to this study, labor pain during intervention on the initial pain scale included moderate and severe. Dwiutami's (2022) research shows that pain scores on the initial pain scale include moderate and severe scales.

Researchers assume that there was a decrease in labor pain scores during the first active phase after a combination of the Slow Deep Breathing technique and lavender aromatherapy in primiparous women giving birth at RSUD dr. Abdul Rivai Berau. This is because slow deep breathing makes respondents relax and can reduce stress levels. A relaxed atmosphere can increase endorphin hormones which function to inhibit the transmission of pain impulses along sensory nerves from peripheral nerve nociceptors to the cornudorsalis then to the thalamus, cerebrum which results in decreased pain perception. Supported by a combination of lavender aromatherapy containing linalool and linalyl acetate which can stimulate the parasympathetic nerves and have a sedative effect. This blocks the flow of sodium in the nerve fibers that transmit pain, thereby blocking pain messages and producing a sedative effect.

c. The effect of the combination of the Slow Deep Breathing technique and lavender aromatherapy on the intensity of labor pain during the active phase of first stage in primiparous women giving birth at RSUD dr. Abdul Rivai Berau.

Based on the research results, it is known that the effect of the combination of the Slow Deep Breathing technique and lavender aromatherapy on the intensity of labor pain in the active phase of the first stage in primiparous women giving birth at RSUD dr. Abdul Rivai Berau obtained a negative rank of 30 respondents, meaning that 30 respondents experienced a decrease in the intensity of labor pain in the first active phase after administering a combination of the Slow Deep Breathing technique and lavender aromatherapy to 5 respondents in primiparous and tie mothers, meaning that 5 respondents experienced the intensity of labor pain. Stage I active phase remained after administering a combination of the Slow Deep Breathing technique and lavender aromatherapy to primiparous maternal patients. The Z value obtained is -4.940 with a p value (Asymp. Sig 2 tailed) of $0.000 < 0.05$ so that H_1 is accepted, namely that there is an influence of the combination of Slow Deep Breathing technique and lavender aromatherapy on the intensity of labor pain during the active phase of labor in maternal patients. primiparas at RSUD dr. Abdul Rivai Berau.

The results of this study are in accordance with Fitri's (2019) research: the reduction in severe pain tends to be less. Study(Ramlah et al., 2023)shows that the statistical test results intervened for 15 minutes and only once. Study(Darmawan et al., 2022)shows that the Wilcoxon test uses Slow Deep Breathing technique and lavender aromatherapy for 15 minutes. Labor pain is an early sign of uterine contractions, these contractions cause pain in the waist area, stomach radiating towards the thighs. Contractions also cause the cervix to open, with the birth canal opening, labor can occur (Andarmoyo & Suharti, 2020). 1st stage labor pain called visceral pain occurs during the first stage of labor and this pain is related to tension in the cervix, which causes it to open(Nurul, 2002). During the first stage of labor, pain can be caused by uterine muscle contractions causing changes in the cervix, pressure on the lower uterine segment, stretching of the cervical tissue and pressure on the structure of the uterus and surrounding nerves. This pain is visceral pain that comes from contractions of the uterus and adnexa, the pain will be felt in the lower abdomen. Visceral pain will slowly become referred pain when the pain spreads from the uterus to the abdominal wall, back abdominal area, buttocks, thighs and lower back Cashion, 2013 in(Yuandira et al., 2021).

Labor pain management can be managed using various methods, namely pharmacological methods and non-pharmacological methods(Hetia et al., 2017). Non-pharmacological pain relief methods are done naturally without using chemical drugs, namely by doing relaxation techniques which include deep breathing relaxation and aromatherapy.(Marsilia & Tresnayanti, 2021).

The slow deep breathing technique is a technique of taking deep breaths during contractions by using chest breathing through the nose to channel oxygen into the blood, which will then circulate throughout the body, so that the mother in labor will feel relaxed and comfortable because the body will release endorphins which are pain relieving hormones. natural pain in the body (Adha, 2013). Apart from that, the slow deep breathing technique, apart from reducing pain intensity, can also increase lung ventilation and increase blood oxygenation. Deep breathing techniques for mothers giving birth are non-pharmacological pain control measures that can help the mother relax her entire body when the uterus contracts. (Aritonang, 2020).

Researchers assume that there is an influence of the combination of the Slow Deep Breathing technique and lavender aromatherapy on the intensity of labor pain in the active phase of the first stage in primiparous women giving birth at RSUD dr. Abdul Rivai Berau. This is because Slow Deep Breathing is a conscious action to regulate deep and slow breathing which can reduce pain by stimulating the central nervous system, namely the brain and spinal cord, to produce siendorfrin which functions as a pain inhibitor. Combined with lavender aromatherapy, it is aromatherapy which contains the main ingredients of linalyl acetate and linalool. Inhaling the aroma of lavender can cause alpha waves in the brain to increase and these waves will help relax the mind.

4. Conclusion

From the results of research and discussion regarding the effect of the combination of the Slow Deep Breathing technique and lavender aromatherapy on the intensity of labor pain in the active phase of first stage in primiparous women giving birth at RSUD dr. Abdul Rivai Berau, concluded that labor pain in the first stage was in the active phase before the combination of the Slow Deep Breathing technique and lavender aromatherapy was carried out in primiparous women giving birth at RSUD dr. Abdul Rivai Berau includes very intense or severe pain, labor pain in the active phase of the first stage after using a combination of the Slow Deep Breathing technique and lavender aromatherapy on primiparous women giving birth at RSUD dr. Abdul Rivai Berau experienced an increase in intense or moderate pain. The combination of the Slow Deep Breathing technique and lavender aromatherapy had an effect in reducing the intensity of labor pain during the first active phase in primiparous women giving birth at RSUD dr. Abdul Rivai Berau. The limitation of the research is that the intervention of a combination of slow deep breathing techniques and lavender aromatherapy is only done once so that further research is expected to increase the number of interventions.

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