

## **The Effect of Lavender Aromatherapy to Perineum Wound Pain Post Partum**

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### **Abstract**

Perineum wound pain in postpartum women to can cause disruption in early initiation breastfeeding (IMD) less than 1 hour, delayed breastfeeding and laziness in mothers to do early mobilization that resulted in disruption of fundes uteri. Lavender aromatherapy is one of the treatment to reduce pain due its bactericidal, analgesic, antidepressant and antispasmodic effects properties when aromatherapy is inhaled. The active substance linalool and linalyl acetate effect as analgesic. The purpose of the research was to determine the effect of lavender aromatherapy to perineum injury pain by post partum women in Public Health Center Kajen I Pekalongan Regency. This research design used quasi-experimental design with control group design approach. Population were post partum mothers with perineum injury level II . The technique of sampling used accidental sampling to take 30 samples. 15 peoples for the treatment group and 15 for the control group. The instrument of data collecting used the Numerical Rating Scales (NRS). Statistic test used Wilcoxon test and Mann Whitney test. The result of the study showed that there was the effect of lavender aromatherapy to perineum injury pain by post partum mother with  $p$  valuee 0,000. From the results of this study was expected health workers can reduce pain perineum postpartum mother and prevent the impact caused from the use of analgesics.

**Key Words: Lavender aromatherapy, Perineum pain.**

### **Introduction**

The majority of postpartum mothers suffer from perineal pain at least in the first few days after birth and even those with an intact perineum may complain of pain. Although women expect pain during labor, postpartum pain usually occurs as an unwanted shock. As a result of the pain post partum mothers experience a sense of comfort that causes disruption initiation early breastfeeding (IMD) less than 1 hour, the mother is reluctant to early mobilization which cause to a decrease in uterine fundus levels are disrupted and mothers often postpone breast-feeding. Although women expect pain during labor, postpartum pain usually occurs as an unwanted shock and may cause difficulty in treating babies (infants), disrupting the bonding attachment of early breastfeeding initiation processes and potentially disrupting the transition to motherhood (Taufan, 2014; 88).

In the period of the puerperal mother, the perineal wound hinders mobility. mobilization is required by the mother as soon as possible, if the mother is reluctant to mobilize it may affect the involution of the uteri resulting in an unhealthy lochea expenditure or discharge lochea expenditure, and postpartum hemorrhage which ultimately disturbs the puerperium (Maryunani, 2010). Perineal wound pain can make difficulty to the mother to sit comfortably. This case can cause bad effect on the mother's desire for breastfeeding and the success of her infant's breastfeeding that ultimately affects Exclusive Asiatic giving (Maureen, 2009; 88).

The pathophysiology of perineal pain experienced by postpartum is due to labor. when labor occurs cervical dilatation and uterine corpus distension stretching the lower segment of the uterus and cervix and the pain is continued to the dermaton supplied by the spinal cord segment similar to the segment receiving the nociceptive input of the uterus and cervix. Strain and tissue tear during labor occur in the perineum and pressure on the perineal skeletal muscle, pain caused by excitatory superficial somatic structures and it is described as sharp and localized pain, particularly in regions supplied by the pudendal nerve (Mander, 2010).

Perineal pain in women who have had perineal stitches may not necessarily lower the level of pain compared with the first mother stitched. Individuals learn from previous experiences but that does not mean that the individual will receive pain more easily in the future (Potter and Perry, 2010). It depends on the coping mechanism of each individual, mothers who have already experienced perineal pain are also at risk of disrupted coping mechanism. Therefore, the pain of handling the perineal pain needs to be done so that the mother feels comfortable and has no negative impact on function also initial experience of being a mother.

Overcoming the pain can be done with pharmacology and non-pharmacological method. The pharmacological method that often used to relieve wound pain perineum in postpartum mother is analgesic. Perineal pain is usually felt for more than 3 days if the mother continues to consume analgesics it can cause an effect on the lactation process during Postpartum. Non-pharmacological methods include cold thermal methods, massage, correct acupuncture breathing techniques, hypnobirthing and aromatherapy reflexology (Judha, 2012: 7).

Aromatherapy is one of non-pharmacological method to reduce pain. Aromatherapy is a healing process using the concentrations of essential oils extracted from plants to enhance the health and wellbeing of the body, mind and spirit (Vitahealt, 2008). The scent is captured by the nose receptor then provides further information to areas in the brain that control emotions and memory as well as information to the hypothalamus which is the body's internal system immersion, including the sexuality sistem, body temperature, and reaction to stress (Sharma, 2009).

Lavender Aromatherapy has properties as bactericidal, analgesic, and antidepressant, antispasmodic when aromatherapy is inhaled, the substances contained therein will stimulate the hypothalamus to secrete the endorphin hormone because it can create a relaxed and calm also active substance in the form of linalool and linalyl acetate in the lavender effect as analgesic (Liu et al., 2008). The results of Ratna's research (2012) show that lavender aromatherapy can decrease the intensity of post sectio caesaria wound pain and study of Marni (2012) proves that aromatherapy can decrease labor pain from pain scale 9.58 to 7.30.

A lavender aromatherapy containing linalyl acetate and linalool inhaled into the nose is captured by the bulbous olfactory and then enters through the olfactory tract branching into two, the lateral and non-medial sides. On the lateral side, this tract sneaks on the third neuron in the amygdala, the seminular gyrus and the ambiens gyrus which is the part of the limbic. The medial side line also ends in the limbic system. Limbic is part of the brain, shaped like the letter C as the central place memory, mood, and intellect are in. The PART of limbic, amygdala is responsible for our emotional response to the aroma. After the limbic aromatherapy stimulates enkefalin or endorphin exposure to the hypothalamus gland, and the ventromedial rostral medulla. Enkefalin stimulates areas in the cerebellum called raphe nucleus to secrete serotonin to create a relaxed, calm and lowered anxiety effect (Baehr; 2010).

This is consistent with Stea Susana's (2014) study which shows lavender essential therapy positively affecting anxiety, controlling insomnia and controlling pain. Serotonin also acts as a neuromodulator to inhibit nociceptive information in the spinal cord. This neuromodulator closes the defense mechanism by occupying the receptors in the dorsal horn so as to inhibit the release of the substance P. Substance P itself is one example of neurotransmitter with action of excitatory. Inhibition of the P substance will make the pain impulse unable to pass through the projection neuron, so it can not be continued to higher processes in the somatosensoris cortex, the parietal lobe, the frontal lobe and the midbrain so that it can not be perceived as pain and the pain decreases (Guyton & hall 2007).

It was confirmed from the results of Salamati's research showed that the pain before and after inhalation of lavender aromatherapy significantly affected the reduction of pain with 0.05 p value. The preliminary survey at Puskesmas Kajen 1 in January 2017 to February 2017 which was delivered in Puskesmas was able to deliver Kajen 1 to get 65 normal maternal mothers, maternal mothers who had perineum rupture were 49 (75%), and maternal mothers without perineum tears 15 (25%). Of 49 people with perineal injury 44 people had moderate pain and 5 had mildly injured pain. Therefore action needs to be done to reduce the pain experienced by postpartum mothers. One of the measures to reduce pain by using lavender aromatherapy. From the above background researchers interested in conducting research titled Effect of Lavender

**Aromatherapy on Perineum Mother Postpartum Injury pain at Puskesmas Kajen 1 Kabupaten Pekalongan**

**1. General Purpose**

To know and to determine the influence of lavender aromatherapy on perineal wound pain in postpartum mother at Puskesmas Kajen I Pekalongan Regency

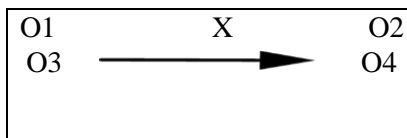
**2. Specific Purpose**

- a. Describing perineal wound pain in postpartum mother in treatment and control group before giving lavender aromatherapy.
- b. Describing perineal wound pain in postpartum mother in treatment and control group after giving lavender aromatherapy.
- c. Analyze the influence of lavender aromatherapy on the perineal wound on the treatment group and the control group.
- d. Analyzed the effectiveness of the influence of lavender aromatherapy on postpartum perineum wound pain in the treatment group compared with the control group.

**Method**

This type of research was experimental with pre and post-control group design. This study used two groups: control group and treatment group that measured the pain scale before (pretest) and after (posttest) intervention. Treatment group was given lavender aromatherapy and still got standard procedure in the form of analgesic, and control group only got fixed procedure that is analgesic.

Description



**Fig 1. Research method**

- O1: Pretest Treatment group Before giving of lavender and analgesic aromatherapy.  
O2: Posttest treatment group with lavender aromatherapy intervention and analgesic  
O3: Pretest control group before giving of analgesic  
O4: Posttest control group with analgesic  
X : Intervention.

The population in this study were all postpartum mothers with second degree perineal lesions in delivery room of Puskesmas Kajen 1 which in April to May 2017 had 32 people. Sampling technique with purposive side, because the sample of this research is based on certain consideration that is postpartum mother with perineal wound of degree 2. According to Sugiono (2008: 91) that taking the number of samples for simple experimental research is 10-20 samples. This study used a sample of 15 people for the intervention group and 15 people for the control group. The instruments used are lavender aromatherapy, aromatherapy furnace as vaporizer and pain scale observation scale Nurmen ical rating scales (NRS) 0-10 pain scale, with pain limitation 0 painless , 1-3 mild pain, 4-6 moderate pain and 1-10 severe pain. The analyzes used with univariate analysis were mean, median and mode and bivariate analysis with wilcoson test and Mann whitney test.

**Results**

Based on research conducted at Puskesmas Kajen 1 in April to May 2017 with a sample of 30 people. Where the sample is grouped into two namely the treatment group and the control group. In the treatment group, lavender aromatherapy was given for 30 minutes inhalation as well as standard fixed procedures given that analgesics and control groups were only given standard fixed procedures. From the research results obtained the following data:

**Table 1 Distribution Frequency Pain Perineum Injuries Postpartum Mother Before Given Intervention**

Groups	Mean	SD	Min	Max
Treatment	6,4	0,816	5	8
Control	6,3	0,737	5	8

Based on table 1 The results showed that the average pain perineum wound respondent treatment group before given intervention in the form of analgetic and aromatherapy lavender 6.4 moderate pain. Most respondents felt pain at level 6 moderate pain) with lowest pain level 5 (moderate pain) and highest 8 (severe pain). Average pain of perineum wound of control group respondents before being given intervention in the form of analgesic 6.3 (moderate pain) Most respondents felt pain at level 6 (moderate pain) with lowest pain level 5 (moderate pain) and highest 8 (severe pain).

**Table 2 the average wound pain perineum respondent after treatment**

Groups	Mean	SD	Min	Max
Treatment	3,93	0,816	2	5
Control	5,33	0,884	4	7

Based on the table 2 indicated that the average wound pain perineum respondent treatment group after given intervention in the form of aromatherapy lavender is 3,93 (mild pain) Most of respondent feel pain at level 4 with lowest level of pain 2 (mild pain) and highest 5 (moderate pain) . The average of perineum wound pain in the control group after intervention was given as an analgesic of 5.3 (moderate pain). Most of the respondents felt pain at level 5 (moderate pain) with lowest pain level 4 (moderate pain) and highest 7 (moderate pain). Normality test result for treatment group of pre test and post test is known to be abnormal distribution because  $\text{sig} < 0,05$ . Similarly, the normality test results of the control group of both pre test and post test is not normal so that the statistical tests used are Wilcoxon and Mann Withney.

**Table 3 Distribution of central pain value of wound in treatment group**

Variabel	N	Mean	Min-max	P
Pre test	15	6,40	5-8	0,000
Post tets	15	3,93	2-5	

Table 3 shows the results obtained of wilcoxon test p value  $0,000 < 0.05$  so that there is influence of aromatherapy lavender to pain perineum wounds of postpartum mother in treatment group

**Table 4 Distribution of central pain value of wound in control group**

Variabel	N	Mean	Min-max	p
Pre test	15	6,33	5-8	0,000
Post tets	15	5,33	4-7	

Table 4 shows the results obtained wilcoxon test p value  $0,000 < 0.05$  so that there is an influence of analgesic on postpartum pain perineum wounds in the control group.

**Tabel 5 Mann Whitney Test**

Group	Mean	N	p value
Treatment	3,93	15	0,000
Control	5.33	15	

Mann Whitney test results obtained p value of  $0,000 < 0.05$ , which means there is a lavender aromatherapy effect on postpartum perineum wound pain in Puskesmas Kajen I Pekalongan District. Lavender intervention has a greater effect in reducing perineal wound pain. The average value of wound pain after treatment group was given lavender aromatherapy of 3.93, while the control group was 5.33. There was a difference of 1.4 ranges of pain between the control group and the moderate pain scale of 5.33 compared with the treatment group of 3.93 mild pain scale.

## **Discussion**

### **1. Postpartum maternal wounds before intervention.**

The results of this study indicate that the level of pain of respondents for the treatment group before the lavender aromatherapy intervention was given with an average of 6.4 (moderate pain) and the control group before given of analgesic invention with an average of 6.3 (moderate pain). This means that postpartum maternal perineal wound pain before being administered between control and treatment groups is the same. It is similar to Wiwin's (2016) study that postpartum mothers with second degree episiotomy have moderate pain (35.7%) and research from Silviana (2011) found that medium pain scale (60%) in postpartum postpartum mother with eperiotomy of pererium yeri experienced by postpatum mother in this research caused by labor process. when labor occurs cervical dilatation and uterine corpus distension stretching the lower segment of the uterus and cervix and the pain is continued to the dermaton supplied by the spinal cord segment similar to the segment receiving the nociceptive input of the uterus and cervix. Strain and tearing of tissue during labor occurs in the perineum and pressure on the perineal skeletal muscle, pain caused by excitatory superficial somatic structures and described as sharp and localized pain especially in areas supplied by the pudendal nerve (Mander, 2010).

The level of pain of each mother are different depending on the way the postpartum mother copes with pain (coping mechanism), this is because the scale of pain is the subjective judgement that an individual perceives, although the mechanism is unclear even the brain structures that give rise to these perceptions are also unclear so pain is fundamentally subjective experience (Potter & erry. 2010). This pain scale is caused by the perception of each individual differently in assessing the pain she suffered. The perception of pain was influenced by several factors including age, sex, attention, anxiety and fatigue but the investigators did not discuss factors that influence, Results of Wenniarti (2014) study that pain in episiotomy post average pain scale 7,60 (severe pain ), This is supported by Andarmoyo (2013) who said in post episiotomy patients will feel the pain from mild pain to severe pain.

### **2. Pain Perineum wound of postpartum mother after intervention**

The results of this study on the treatment group that is giving lavender aromatherapy and still provide a fixed procedure of pain treatment with analgesic paracetamol obtained results of 3.93 (mild pain) is in accordance with the research conducted by Wiwin (2016) after giving arometerapi scale pain was moderate pain (35.7%) to mild pain (39.3%). The main chemical components of lavender are linalyl acetate, linalool. Linalyl acetate is used as anesthesia for animals and can inhibit chemical pathways. Linalool can also be used as an antispasmodic (Liu, Lin, Jiang, et al, 2008).

Active substances in lavender aromatherapy have properties as bactericide, analgesic, antidepressant, and antispasmodic when aromatherapy is smoked, linalool and linalyl will stimulate the hypothalamus to release the endorphine hormone because it can cause a sense of relaxation and also effect as analgetik (Liu et al, 2008).

Lavender is also useful as a sedative, relieves pain and alters the perception of pain (Lavabree, 1990 in Sun Hee Han, 2012). this is in accordance with research conducted by Argi Virgona Bangun (2013) that there is influence of giving aromatherapy lavender to patient post operation at hospital Dustira Cimahi. Lavender has many benefits that is as a preventive antiseptis infection, antibiotics and anti fungal. The essential oil of lavender can be used to treat insomnia, improving sleep quality and improving sleep quality patients in hospitals and reducing the need for sedatives at night. Massage with lavender essential oil improves sleep quality in patients with rheumatoid arthithis. The essential oil of lavender can reduce anxiety. Massage using lavender can reduce anxiety in dialysis patients. (Sharma, 2009) This theory is reinforced by research by CS Agustina 2016 that massage with aromatherapy can reduce anxiety, thus increasing milk production in post partum mothers And also research from Melyana 2016 that aromatherapy massage proven to decrease stress level so as to increase the level of prolactin in postpartum especially in primipara.

In the control group that was only given paracetamol have decrease in pain with an average of 5.33 moderate pain. Perineal pain in the control group that was given analgesics without aromatherapy decreased slightly from 6.3 (moderate pain) to 5.3 (pain medium). The results of this study in accordance with Danuatmadja & Meiliasari (2008: 47) which states that analgesic is a drug that can reduce or eliminate pain without disturbing the awareness of the mother who got it. The principle of the analgesic method is that the mother continues to feel pain, but the pain level is slightly reduced.

### 3. Effect of lavender aromatherapy on postpartum mother's perineal wound pain.

The results showed that wilcoxon test results obtained p value  $0,000 < 0,05$  so that there is influence of lavender aromatherapy to postpartum mother perineal wound pain in treatment group. Provision of lavender aromatherapy intervention reduced the average perineal wound pain from 6.40 to 3.93 or a decrease in pain by 2.47. This is in accordance with research from ening (2014) there is a difference of pain intensity in post-sectio caesarea pain after giving lavender aromatherapy with p value 0,001.

Wilcoxon test result obtained p value  $0,000 < 0,05$  so that there is influence of analgesic to postpartum mother's perineal wound pain in control group at Puskesmas Kajen I Regency of Pekalongan Analgesics in control group can decrease mean pain of perineal wound before given analgesic equal to 6,33 and after analgesic averaged postpartum perineum wound pain of 5.33% decrease in perineal wound pain before and after 1 scale of pain scale. This decrease in pain scale in postpartum mother with second degree perineal lesion is due to paracetamol which is a non narcotic analgesic drug.

Paracetamol is an antipyretic and analgesic but anti inflammatory is weak, this is because the biosynthetic paracetamol only inhibits and does not direct blockade of prostaglandins so its analgesic properties are used to treat mild to moderate pain. Paracetamol is absorbed by the gastrointestinal tract within half an hour to 1 hour and half-life for 2-3 hours (Pharmacology and therapy, 2007) This is corroborated by research by Ismail muhamad (2013) in his research that paracetamol is effective in relieving post operative pain with mild to moderate pain.

Mann Whitney test results obtained p value of  $0.000 < 0.05$ , which means there is influence of lavender aromatherapy on postpartum perineum wound pain in Puskesmas Kajen I Pekalongan District. Mother experienced a decrease in pain after aromatherapy was given from the average pain of respondents before given aromatherapy of 6.4 to 3.93. This suggests that lavender aromatherapy can reduce the pain of postpartum perineal wound. The results of the study were similar to those done by Ratna (2013) that aromatherapy decreased the intensity of post sectio caesarea wound pain.

Aromatherapy is inhaled by the respondent through smell and carried by the nerve of the olfactory device to the hypothalamus or limbic area of the brain. Stimulation of the brain allows the brain to work to reduce pain. This is in accordance with Sharma (2009) which states that aromatherapy directly affects the brain such as analgesic drugs. According to (Howart and Hughes, 2007) The odor response generated will stimulate the brain's neurochemical cell work.

For example, a pleasant odor will stimulate the thalamus to excrete enkefalin that acts as a natural pain reliever and produces a feeling of calm. The pituitary gland also releases chemical agents into the blood circulation to regulate the function of other glands such as thyroid and adrenal. Smell that creates a sense of calm will stimulate the area of the brain called raphe nucleus to secrete serotonin secretion which allows us to sleep this according to research from Kurnia (2009) that lavender aromatherapy improves sleep quality in the elderly. A lavender aromatherapy containing linalyl and linalool which are inhaled into the nose are captured by the olfactory bulb then enter through the olfactory tract, which branches into two, the lateral and medial sides. On the lateral side, this tract sneaks on the third neuron in the amygdala, the seminular gyrus and the ambiens gyrus that are part of the limbic. Limbic is part of the brain shaped like the letter C as a central place and memory, the mood of intellect is located. Part of the limbic amygdala is responsible for our emotional response to the aroma. Hipocampus is responsible for memory and recognition of odors, therefore, pleasant smells will create a feeling of calm and pleasure that can reduce anxiety (Baehr 2010). This is consistent with Stea Susana's (2014) study indicating that essential oil therapy of lavender positively affects insomnia anxiety and controlling pain, and Research from Syukrini (2016) that aromatherapy affects maternal anxiety in the first stage of labor.

Serotonin also acts as a neuromodulator to inhibit nociceptive information in the spinal cord. This neuromodulator closes the defense mechanism by occupying the receptors in the dorsal horn so as to inhibit the release of the substance P. Substance P itself is one example of neurotransmitter with action of excitatory. Inhibition of the substance P will make the pain impulse unable to pass through the projection neuron, so it can not be passed on to higher processes in the parietal lobe somatosensoris cortex, the frontal lobe and the midbrain so that it can not be perceived as pain and a decrease in pain (Guyton & hall 2007) . This is confirmed by the results of the research by Salamati 2014) found that the pain before and after inhalation of lavender aromatherapy significantly affected the reduction of pain with p- value 0,05, and Marni (2012) in the study stated that there is significant influence of lavender aromatherapy in a inhalation of labor pain from 9.58 to 7.30. The results of this study found a difference of 1.4 ranges of pain between the control group and the moderate pain scale of 5.33 compared with the treatment group of 3.93 mild pain scale. In the control group is the group that only given the fixed procedure of handling pain in the form analgesics and in the treatment group given lavender aromatherapy as well as the fixed procedure of analgesics. However, lavender aromatherapy has an effect on pain on the perineal wound.

In the control group which only given of paracetamol pain scale from 6.3 to 5.3 this was due to the effect of paracetamol that biosintstically inhibited Prostaglandin. prostaglandins are chemicals that sensitize free nerve endings and impart pain to the brain. With prostaglandins inhibited the pain will be reduced. In the treatment group, the group that given lavender aromatherapy and still given pain scale analgesics from 6.4 to 3.93 this is because of the effects of paracetamol analgesics as well as the effects of lavender aromatherapy. When lavender aromatherapy inhaled, then hypothalamus will release endorphin, serotonin and enfekalin hormone. Endorphin hormone is a substance that causes a sense of calm, relaxed and happy. Serotonin and enfekalin are neuromodulator that prevents pain so it can be used as a natural pain reliever. Aromatherapy lavender in addition to reducing the pain also cause a sense of relaxation and a sense of happiness. Therefore lavender aromatherapy can be used as an alternative pain relief in postpartum mother with perineal wound.

## **Conclusion**

Based on the results of research conducted at Puskesmas Kajen 1 Pekalongan District, which consists of treatment groups and control groups can be summarized as follows :

1. Average perineum wound pain in the treatment group prior to intervention in the form of lavender aromatherapy of 6.4 and average perineal wound pain in the control group of 6.33.
2. Average perineum wound pain respondent treatment group after given intervention in the form of lavender aromatherapy equal to 3,93 and average of perineal wound pain in control group after giving analgesic intervention equal to 5,33.

3. There was influence of lavender aromatherapy on postpartum perineum wound pain in treatment group with p value 0,000 and analgesic effect on postpartum maternal perineal wound pain in control group at Puskesmas Kajen I Pekalongan with p value 0,000,
4. There is a difference of effectivity of lavender aromatherapy to postpartum perineum wound pain in Puskesmas Kajen I of Pekalongan Regency with p value 0,000 <0,05.

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