



THE RELATIONS OF AROMATHERAPY WITH THE INTENSITY OF PAIN ON LABOR WOMEN STAGE I ACTIVE PHASE IN PMB CIMAHI CITY

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ABSTRACT

Background : One of the causes of maternal death are prolonged labor in the first stage which caused by fear, tension, or exhaustion. The study lays out only 15% of births take place without pain and 20% of births are accompanied by pain severe pain. One of the efforts to reduce the pain of labor is through non-pharmacological methods by administering aromatherapy, aromatherapy is providing therapeutic effects for the body, mind, and soul wholly.

Methods : This study was conducted using an analytical method with 15 respondents as Case and 15 respondents as a control. The instrument used was a universal pain assessment tool. The data taken is the primary data and analyze with univariate and bivariate to use Chi Square .

Results : The result showed that the majority (73.3%) of respondents who were given aromatherapy experience moderate pain and a small percentage (6.7%) of respondents experiencing severe pain while the respondents were not given aromatherapy more than half (60%) had moderate pain and almost half (40%) experienced severe pain. Statistical test results obtained p value 0.034 so that there is a relation aromatherapy with the intensity of pain on labor women stage I active phase.

Conclusions: The health service advised to do aromatherapy as an alternative to reduce the intensity of pain in labor.

Keywords: Aromatherapy, Case-control, Pain Intensity

INTRODUCTION

According to the WHO report of 2014 the world maternal mortality rate (AKI) in the world is 289,000 people and 99% of maternal deaths caused by birth or birth problems occur in developing countries. Based on Indonesian Demography and Health Survey (IDHS) in 2012, maternal mortality in Indonesia is still high at 359 per 100,000 live births. This figure is slightly decreased although not too significant. The maternal mortality rate in West Java was 86 per 100,000 live births (DINKES West Java, 2012), while the maternal mortality rate in Cimahi was 10 cases per 10,539 live births (Profil Dinkes Cimahi, 2014).

One of the causes of maternal mortality is the prolonged labor in the first stage (SDKI, 2012). Prolonged labor occurs when a strong contraction lasts for more than 12 hours for a mother who has given birth or for more than 24 hours in the first woman giving birth. The cause of prolonged labor in the first stage are fear, worry, tension, or fatigue of the mother (Klein et al, 2012). One of the causes of maternal fatigue is the ongoing pain (Aprilia, 2010). According to Bonica in Tournaire and Yonneau (2007) that only 15% of births go on

without pain or mild pain, 35% of deliveries with moderate pain, 30% of deliveries with severe pain and 20% confinement with pain (Tournaire & Yonneau, 2007).

Labour pain is an uncomfortable fell due to stimulation of special nerve endings. During labor and vaginal delivery; pain caused by uterine contractions, cervical dilatation and perineal distention (Rohani et al, 2011). Sensation of pain experienced by maternal mother comes from the pain signal that arises when the uterine muscle contracts with the aim to push the baby in the uterus out (Sondakh, 2013).

According to Grantly Dick Reed in Sondakh (2013), a pioneer of natural childbirth methods, the cause of labor pain is a fear-tension pain syndrome, a sensation that results from contraction of the lower uterine muscle, which maternal mothers perceive as pain. According to him, the birth itself does not contain pain-causing components such as trauma, tissue injury, and presence of pain-sensory fibers. Thus, according to him, the pain caused by the mental tension caused by fear (Sondakh, 2013).

Pain is needed to recognize contractions during labor, but sometimes the pain can lead to a persistent

pathological outcome, plus anxiety and fear experienced by the client. This can lead to fatigue resulting in a decrease in contractions, thus the labor is prolonged. Prolonged labor can harm the mother and fetus (Poweell, R.A.D, 2010).

Pain causes tachycardia to the mother (especially in the 2nd stage of labor), increased oxygen consumption, lactic acid production, hyperventilation with respiratory alkalosis risk, and increased skeletal muscle tension. Pain that does not subside can also improve the response to subsequent pain. (Murray, Huelsmann, 2013).

One effort to reduce labor pain is through nonpharmacological methods by giving aromatherapy (Marshall, 2014). Aromatherapy is a treatment method using the aroma of oil produced by plants (Suranto, 2011). Aromatherapy is real efficacious in providing therapeutic effects for body, mind, and spirit as a whole (Julianto, 2016).

Sisca Dewi Karlina et al (2015), in his research on the effect of giving aromatherapy to the intensity of physiological labor pain showed the difference of birth pain level based on universal assesment of pain tool between before given aromatherapy (pretest) with after given aromatherapy (posttest) (Karlina et al, 2015). The same results also obtained from the results of research conducted by Tarsikah, et al (2012). Her research proves that inhalation of lavender aromatherapy can reduce labor pain in primigravida stage I active phase. Research subjects who experienced severe pain and worst pain, after inhalation of lavender aromatherapy became severe pain and moderate pain (Tarsiah et al, 2012: 23-24). From both studies, it can be seen that giving aromaterpi become one of relaxation technique which is considered able to decrease pain in labor.

Midwifery Practice Mandiri Deni Irmalini, SST located at Jalan Lestari 17 RT 08/19 Padusuka, has applied the latest mother care. Various methods of maternity care like gentle birth, hypnobirthing and others has been applied to the mother. BPM Deni Irmalini is also one of the Independent Practice Midwives who have applied birth care with aromatherapy, although in practice not all mothers who gave birth in Praktek Mandiri Bidan (PMB) Deni Irmalini SST given aromatherapy, it is because she adjusted the method given to the needs of maternity mothers. From the results of preliminary studies on 5 mothers found that the mother claimed to feel more relaxed in childbirth so that the mother becomes calm and pain intensity felt reduced after giving aromatherapy.

Based on the above, the authors are interested to know the relationship of giving aromatherapy with the intensity of pain in the maternal mother

when active phase 1 in PMB Deni Irmalini, SST on Agustus s.d Oktober 2018.

METHODS

This research uses correlation analytic research design with Case-control approach and observational research design, in this research the researcher do observation to know the relation of giving aromatherapy with the intensity of pain in maternal mother during stage 1 active phase.

This research has independent variable (independent) that is giving aromatherapy. While the dependent variable is the intensity of maternal pain.

Population is the whole object of research or object under study (Notoadmodjo, 2010). The population in this study were all mothers who gave birth at PMB Deny Irmalini, SST on Agustus 2018 s.d Oktober 2018.

The sample is the object under study and is considered to represent the entire population. The way of sampling in this research that is using technique Quota Sampling amounted to 30 people. Observations were made on two different groups; Case group is a maternal mother given aromatherapy while control group taken from maternal group that is not given aromatherapy. The exclusion criteria for the samples in this study were maternity mothers who did the delivery at BPM Deni Irmalini SST who experienced complications and maternity mother who came to PMB Deni Irmalini with complete opening or dilatation.

Data collection techniques is a process approach to the subject and the process of collecting the characteristics of the subject required in a study. Data collection techniques conducted in this study is a technique of collecting non-inquiry data (primary) by means of observation. Observation is a technique of data collection, where the researchers make direct observations to the object of research to see closely the activities undertaken (Notoatmodjo, 2010).

The instrument used in this study is a pain observation sheet that contains a universal scale of Pain Assessment Tool. While the tool used in this research is aromatherapy heater (disfusser) and aromatherapy lavender oil (4-5 drops on each use).

Data analysis conducted in this research is univariate and bivariate data analysis. Univariate analysis process is conducted on the variables of the research results. This analysis only describes descriptively through distribution tables and percentages of each variable. Bivariate analysis was performed on two variables that were suspected to be correlated (Notoatmojo, 2010). To see the

relation of aromatherapy and intensity of labor pain, Chi-Square test was done. Chi Square test is useful to test the relationship or influence of two nominal variables and measure the strength of the relationship between one variable with other nominal variables (C = Coefficient of contingency).

RESULTS

Table 1 Distribution of Frequency Intensity of Labor Pains on Active Phase Without Aromatherapy.

Pain Category	Frequency	Percentage
Moderate Pain	9	60
Severe Pain	6	40
Total	15	100

Based on table 1 above can be seen that from 15 respondents who were not given aromatherapy more than half of respondents (60%) had moderate pain intensity as much as 9 respondents.

Table 2. Distribution of Frequency Intensity of Labor Pains on Active Phase With Aromatherapy Giving.

Pain Category	Frequency	Percentage
Mild Pain	3	20
Moderate Pain	11	73,3
Severe Pain	1	6,7
Total	15	100

Based on Table 2 above can be seen that from 15 respondents who were given aromatherapy most respondents (73.3%) had moderate pain intensity of 11 respondents

Table 3. Mean Distribution of Pain Intensity in Labour Active Phase with Aromatherapy and Without Aromatherapy

Pain Category	Without Aromatherapy		With Aromatherapy		P Value
	N	%	N	%	
Mild Pain	0	0	3	20	0.034
Moderate Pain	9	60	11	73,3	
Severe Pain	6	40	1	6,7	
Total	15	100	15	100	

Based on table 3 it can be seen that most (73.3%) respondents who were given aromatherapy

had moderate pain or 11 respondents and a small part (6.7%) of respondents experienced severe pain that is as much as 1 respondent whereas in respondents not given aromatherapy more than half (60%) had moderate pain or as many as 9 respondents and almost half (40%) had severe pain or 6 respondents. Statistical test results obtained p value 0.034 so there is a relationship between giving aromatherapy with the intensity of maternal pain during the stage 1 active phase.

DISCUSSION

Intensity of Labor Pains on Active Phase without Aromatherapy Giving.

Based on Table 4.1 of 15 respondents who were not given aromatherapy, 9 respondents (60%) had moderate pain intensity and 6 respondents (40%) had severe pain intensity.

Birth pain is a bad taste due to stimulation of special nerve endings. During labor and birth of the vagina; pain caused by uterine contractions, cervical dilatation and perineal distention (Rohani et al, 2011). Sensation of pain experienced by maternal mother comes from the pain signal that arises when the uterine muscle contracts with the aim to push the baby in the uterus out (Sondakh, 2013).

Lamaze and wheelbarrow (2004) states that 85-90% of labor takes place with pain and only 10-15% of painless births take place. At the time of delivery, if a person feels fear or panic then the brain will drain the substance that closes the expenditure of endorphin so that the extraordinary pain is can be feel and cause the mother to be stressed in confronting labour making impulse pain multiply and weak contraction of uterine muscle (Aprilia, 2010, sinclar 2010)

Labor pain is caused by various factors, among others; decreased oxygen supply to the uterine muscle (labor pain becomes more severe if short intermittent contraction interval, so that the oxygen supply to uterine muscle has not fully recovered), stretching of the cervix (effacement and widening), infant pressure on the nerves at and near the cervix and vagina, tension and stretching of connective tissue supporting the uterus and hip joint during contraction and fall of the baby, pressure on the urinary tract, bladder, and anus, stretching of pelvic floor muscles and vaginal tissue, fear and anxiety, which can lead to the release of large amounts of stress hormones (epinephrine, norepinephrine, etc.) which resulted in a longer and more severe labor pain (Simkin, 2008). Without intervention, the perceived labor pain will increase.

Bonica (1995) in his study of 2700 inpatients in 121 obstetric and gynecologic centers of 36 countries found 15% of painless or mild painless deliveries, 35% labor with moderate pain, 30% labor with severe pain and 20% confinement accompanied the pain is great.

Intensity of Labor Pain on Active Phase with Aromatherapy Giving.

Based on table 4.2 above can be seen that from 15 respondents who were given aromatherapy most respondents (73.3%) have moderate pain intensity of 11 respondents.

The pain felt in labor varies from woman to woman. Many predisposing factors can reduce or increase the degree of labor pain that a woman feels, including medical treatment (Simkin, 2008).

Aromatherapy lavender is known as a sedative effect. Theoretically lavender aromatherapy works by affecting not only the physical but also psychological (Speed Publishing 2014). When aromatherapy enters the nose by inhalation directly, it will work faster because the molecules of aromatherapy essential oils are easily evaporated by the hypothalamus because the aroma is processed and converted by the body into an action with the release of a neurochemical substance of endorphin and serotonin so that it directly affects the olfactory organs and perceived by the brain to provide reactions that make physiological changes to the body, mind, soul and produce a calming effect on the body, therefore the intensity of the naked pain tends to be lighter (Crow, David 2012). In addition, lavender also produces a therapeutic effect that can relax the tense muscles so that open the narrow blood flow (Ogan, 2005).

The giving of aromatherapy to decrease the intensity of pain is done by inhalation. Inhalation is one of the ways introduced in the use of the simplest and fastest aromatherapy methods. Inhalation is also the oldest method of using aromatherapy. In inhalation, aromatherapy entering from outside the body into the body with one stage easily, passing through the lungs to the blood vessels through the alveoli. (Schnaubelth, Kurth 2013)

Aromatherapy used by inhalation is aromatherapy oil placed on top of the electric apparatus (steam tool), where it serves as a vaporizer. Add 4-5 drops of essential oil in a water-filled steam or evaporative apparatus. Put the device in a safe place or corner of the room, can also be placed beside or parallel to the patient's head. Instruct the patient to breathe for 10 minutes, with a blind eye and relaxation. The diuretic effects of

aromatherapy can be felt within 30 minutes after inhalation.

In a study conducted by Karlina (2012), the frequency of pain level after lavender aromatherapy intervention was given, the average intensity of the respondent's pain was 4.65 with the details of 1 person (5%) feeling severe pain, 2 people (10%) felt pain light, 17 people (85%) feel moderate pain.

So it can be concluded that the intensity of pain after given lavender aromatherapy is lower than without lavender aromatherapy given.

The Relation of Aromatherapy With Pain Intensity In Stage 1 Active Phase.

Based on table 4.3 it can be seen that most (73.3%) respondents who were given aromatherapy had moderate pain or 11 respondents and a small part (6.7%) of respondents experienced severe pain that is as much as 1 respondent whereas in respondents not given aromatherapy more than half (60%) had moderate pain or as many as 9 respondents and almost half (40%) had severe pain or 6 respondents.

The results above showed that in the group given more aromatherapy experienced moderate pain than the group without aromatherapy.

In table 4.3 also can be seen that the respondents who were given aromatherapy group also experienced severe pain but the number of respondents less than respondents who experienced severe pain in the group without aromatherapy.

Statistical test results obtained p value 0.034 so there is a relationship between giving aromatherapy with the intensity of maternal pain during the stage 1 active phase.

The results obtained in accordance with research conducted by Tarsikah, et al (2012). In the research, the results obtained inhalation of lavender aromatherapy can reduce labor pain in primigravida stage I active phase. Research subjects who experienced severe pain and severe pain, after inhalation of lavender aromatherapy became severe pain and moderate pain.

The same results also obtained by Imawati, et al (2012) in her research. The result of tabulation of data showed that there was a decrease in the intensity of labor pain in the first stage where labor pain before lavender aromatherapy was given 8 (100%) suffered pain with heavy pain category and after given lavender aromatherapy it was found that 6 (75%) in the moderate pain category. The results showed that the level of labor pain in the first stage after giving lavender aromatherapy decreased compared to before given lavender aromatherapy.

According to Dr. Alan Huck (Neurology Psychiatrist and Director of Research Center for Odor and Rasa), the aroma directly affects the human brain, like narcotics. The nose has the ability to distinguish over 100,000 different smells that are very influential on the brain related to mood, emotion, memory, and learning. By inhaling the aroma of lavender will increase the alpha waves in the brain and waves is what helps us to feel relaxed (Simkin, 2008).

Lavender is a flowering plant in a lamiaceae tribe that has 25-30 species. Lavender comes from the south-central region of tropical Africa and east to India. Today lavender has been planted and developed around the world. This beautiful and small purple colored plant has very beneficial properties for humans. Lavender aromatherapy oils are known as tranquilizers, the sedative effects of *lavandula angustifolia* due to the presence of coumarin compounds in the oil (Ogan, 2005: 71).

The mechanism of action of aromatherapy materials is through the body's circulatory system and olfactory system. The olfactory organ is the only sense of taste with a variety of nerve receptors that are directly related to the outside world and are a direct channel to the brain. Only a number of 8 molecules have been able to trigger electrical impulses on the nerve endings. It takes about 40 nerve endings to be stimulated before one is aware of what smells are smelled (Solikha, 2011).

Odor is a volatile molecule in the air. When entering the nasal cavity through inhalation, will be translated by the brain as a process of smell. The olfactory process is divided into three stages; starting with the acceptance of the odor molecule by the olfactory epithelium, which is a receptor containing 20 million nerve endings. The smell will then be transmitted as a message to the olfactory center located at the back of the nose. This olfactory center is just as big as a pomegranate seed on the brain's base. At this place various neuron cells interpret the odor and drive it to the limbic system which will then be sent to the hypothalamus for treatment. When the essential oil is inhaled, the volatile molecule will carry the aromatic element present in the oil content to the top of the nose. Its deep vibrating hair, which acts as a receptor, will deliver an electrochemical message to the emotional and memory center of a person that will then deliver the message back to the rest of the body through the circulatory system. Messages delivered throughout the body will be converted into action by releasing a neurochemical substance of pleasure, relaxation, calm or arousal. Through inhalation, some molecules will enter the lungs. The aromatic

molecule will be absorbed by the mucosal lining of the respiratory tract, both on the bronchial and on the smooth branch (bronkioli). At the time of gas exchange within the alveoli, the molecule will be transported by the blood circulation inside the lungs. Deep breathing will increase the amount of aromatic substances into the body. The resulting odor response 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 (Solikha, 2011).

CONCLUSIONS

More than half (60%) respondents have moderate pain intensity in groups not given aromatherapy. Most (73.3%) of respondents had moderate pain intensity in the group given aromatherapy. Statistical test results obtained p value 0.034 thus there is a significant relationship between giving aromatherapy to the intensity of maternal pain during the stage 1 active phase.

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