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The effect of giving lavender aromatherapy on primary menstrual pain (dysmenorrhea)

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ABSTRACT

Dysmenorrhea (menstrual pain) is abdominal pain that comes from uterine cramps that occur during menstruation. Dysmenorrhea consists of primary and secondary dysmenorrhea. As many as 90% of adolescent women throughout the world experience problems during menstruation and more than 50% of menstruating women experience primary dysmenorrhea. Primary dysmenorrhea is menstrual pain that is not based on a pathological condition, while secondary dysmenorrhea is menstrual pain that is based on a pathological condition. The aim of this study was to analyze the effect of giving lavender aromatherapy on primary menstrual pain (dysmenorrhea) in Midwifery Study Program students at STIK Midwifery. This research method uses a pre-experimental one group pre and post test design. The research population was all 58 students of the STIK Bina Husada Midwifery Study Program, 20 total samples. The sampling technique uses purposive sampling. Data collection uses questionnaires and observation sheets. Analysis using the Spearman Rank correlation test (p=0.05). When giving 5 minutes of lavender aromatherapy there was no change in the respondent's pain scale, and when giving aromatherapy after 10 minutes there was a change so it can be concluded that there was an effect of giving lavender aromatherapy on primary menstrual pain (dysmenorrhea) in students of the STIK Bina Husada midwifery study program.

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1. INTRODUCTION

Puberty or puberty is a transition period between childhood and adulthood. Puberty in women begins at the age of 8-14 years. The start of puberty is different for each individual depending on nation, climate, nutrition and culture (Mokoginta et al., 2021). According to (Review et al., 2022), one of the signs of puberty is menstruation. Menstruation is a natural cycle that occurs regularly to prepare a woman's body every month for pregnancy. The menstrual cycle involves several stages that are controlled by the interaction of hormones released by the hypothalamus, glands beneath the forebrain and the ovaries. At the beginning of the cycle, the lining of the uterine tubes will begin to develop and thicken (Pengetahuan & Putri, n.d.). This layer acts as a support for the growing fetus when a woman is pregnant. During menstruation, some women experience menstrual disorders, known as menstrual pain (dysmenorrhea). Dysminorrhea is menstrual pain that can interfere with daily activities, pain in the pelvic area and is a result of prostatglandin (Bsi et al., 2020). The cause comes from the uterine muscle during menstruation, contractions become stronger. There are two

types of menstrual pain, namely primary and secondary. Primary menstrual pain is menstrual pain without reproductive organ abnormalities or without gynecological disorders, while secondary menstrual pain is menstrual pain that with gynecological disorders. The incidence of menstrual pain in the world is very large (Surabaya et al., n.d.). On average, more than 50% of women in every country experience menstrual pain. In America the percentage figure is around 60% and in Sweden around 72%. Meanwhile, in Indonesia it is estimated that 55% of women of productive age are tormented by menstrual pain. The incidence of menstrual pain ranges from 45-95% among women of productive age (Rahmah, 2019).

Dysminorrhea pain, if not treated immediately, will affect the individual's mental and physical function, making it urgent to take immediate action/therapy (*1 , 2 1)*, 2020). In general, dysmenorrhea pain management is divided into two categories, namely pharmacological and non-pharmacological approaches (Minichil et al., 2020). Pharmacologically, pain can be treated with analgesic therapy, which is the most commonly used method to relieve pain. Even though analgesics can relieve pain effectively, the use of analgesics will result in addiction and will cause dangerous side effects for the patient (Tolossa & Bekele, 2014). As an alternative, various studies have been carried out to find replacement or complementary therapies that are safer compared to therapy with NSAIDs (Nonsteroidal Anti-Inflammatory Drugs), such as herbal therapy, supplement therapy, acupuncture therapy, behavioral therapy, and aromatherapy (Shiferaw et al., 2014).

Aromatherapy is a complementary therapy that uses essential oils from fragrant plants to reduce health problems and improve quality of life (Tsegaye & Getachew, 2019). Smells have a direct effect on the brain like analgesics. For example, smelling lavender will increase alpha waves in the brain and help you feel relaxed (Nasiri & Mahmodi, 2018). Lavender aromatherapy is useful for relaxation, anxiety, mood, and after surgery it shows a decrease in anxiety, improvement in mood, and an increase in the strength of alpha and beta waves which shows increased relaxation (Kannan & Claydon, 2014). Alpha waves are very beneficial in a relaxed state, encouraging the flow of creative energy and feeling fresh and healthy. The alpha wave state is ideal for contemplation, problem solving, and visualization, acting as a brain gateway associated with our mood, emotions, memory, and learning. All smells that reach the limbic system have a direct influence on our mood (Sadeghi Aval Shahr et al., 2015).

According to (López-Liria et al., 2021) essential/aromatherapy oils have therapeutic properties, one of which is as an analgesic agent (relieves pain), namely chamomile, frankincense, cloves, wintergreen, mint and lavender. Lavender oil can also cure various disorders. The benefits of lavender oil according to (Iacovides et al., 2013) are that it stimulates appetite, acts as a tonic and antispasmodic, heals minor and severe burns, cuts due to cuts, pain, has a very strong antiseptic effect, is used in many cosmetic preparations, as an insect repellent, healing muscle aches and pains, influenza respiratory disorders, digestive disorders, genital disorders, loose stools such as Cystitis and Dysmenorrhoea, headaches and pre-menstrual tension.

The research entitled "Giving ylang-ylang aromatherapy (cenanga odorata) to lower blood pressure in the elderly in Sumlaran hamlet, Sukodadi village, Sukodadi sub-district, Lamongan district" the results of the research showed that before giving ylang-ylang aromatherapy almost half of them had grade 2 hypertension, namely 9 people or 45%, after giving ylang-ylang aromatherapy some had grade 1 hypertension, namely 10 people or 50%, there was a difference in blood pressure before and after giving ylang-ylang aromatherapy to the elderly with p = 0.001 and Z = -3.357 (Quick et al., 2019).

Primary dysmenorrhea usually occurs from the first menstruation at approximately 10-15 years of age until the age of 25 years (Iacovides et al., 2014). Therefore, in this study, the population taken was all students of the STIK Bina Husada Palembang Midwifery Study Program whose ages ranged from 18-25 years. From the results of a preliminary study conducted on 8 Midwifery Study Program students taken from several different classes and semesters, it was found that 8 of them experienced menstrual pain (dysmenorrhea) and 3 students stated that they had used aromatherapy

to treat menstrual pain and the results were positive. reduce menstrual pain and the rest use pain relievers to reduce menstrual pain.

By knowing that the average student experiences dysmenorrhea every time they menstruate and undergo various types of treatment, the researchers wanted to research the effect of lavender aromatherapy on menstrual pain.

Based on the background, the author is interested in conducting research entitled "The Effect of Lavender Aromatherapy on Primary Menstrual Pain (Disminorrhea").

2. RESEARCH METHOD

This research design uses a research design with a pre-experimental study design, one group pre and post test design, namely using one group of respondents where the group is given treatment. The population in this study were all students of the STIK Bina Husada Midwifery Study Program in 2023. The total student population of the STIK Bina Husada Midwifery Study Program in 2023 was 58 students. In this study, 20 samples were taken of students from the STIK Bina Husada Midwifery Study Program who experienced primary dysmenorrhea using inclusion and exclusion criteria.In this research, the sampling technique uses a purposive sampling technique, namely by taking cases or respondents who happen to exist or are available in a place according to the research context (Iacovides et al., 2015).

3. RESULTS AND DISCUSSIONS

The research was carried out at STIK Bina Husada, with a sample size of 20 respondents. The results of this research will be presented using a frequency distribution table which includes:

Table 1 Distribution of dysmenorrhea menstrual pain scale before being given lavender aromatherapy

Menstrual Pain Scale	Frequency	Percentage (%)
Mild Pain	5	25
Moderate Pain	15	75
Amount	20	100

Based on table 1, it can be seen the results of the menstrual pain category in measurements before being given lavender aromatherapy to 20 respondents. In the measurements before being given lavender aromatherapy, there were 5 respondents (25%) in the mild pain category and 15 respondents (75%) in the moderate pain category.

Table 2 Distribution of Primary Menstrual Pain Scale (Disminorrhea) 5 Minutes After Lavender Aromatherapy

Menstrual Pain Scale	Frequency	Percentage (%)
No Pain	-	-
Mild Pain	5	25
Moderate Pain	15	75
Amount	20	100

Based on the results from table 2, it can be seen that the results of the menstrual pain category were measured 5 minutes after being given lavender aromatherapy to 20 respondents. In the measurements after being given lavender aromatherapy, the highest pain category was moderate pain, 15 respondents (75%). In the 5 minute measurement, it can be seen that there is still no effect of lavender aromatherapy on the pain scale of the respondents. This can be seen from the number of respondents who experienced moderate pain and mild pain which was still the same as before they were given aromatherapy.

Table 3 Distribution of Primary Menstrual Pain Scale (Disminorrhea) 10 Minutes After Lavender Aromatherapy

Menstrual Pain Scale	Frequency	Percentage (%)
No Pain	10	50
Mild Pain	7	35
Moderate Pain	3	15
Amount	20	100

Based on the results from table 3, it can be seen that the results of the menstrual pain category were measured 10 minutes after being given lavender aromatherapy to 20 respondents. In the measurements after being given lavender aromatherapy, the highest category was no moderate pain, 10 respondents (50%). In this measurement it can be seen that there is an influence of lavender aromatherapy on the menstrual pain scale in respondents, this can be seen from the number of respondents who experience moderate pain and mild pain has decreased as well as respondents who have no pain.

Table 4 Distribution of the Effect of 10 Minutes of Lavender Aromatherapy on Primary Menstrual Pain (Dysmenorrhea)

Menstrual Pain Scale	5 minutes after administration Lavender Aromatherapy		10 after being given Lavender Aromatherapy	
	Frequency	Percentage	Frequency	Percentage
No Pain	-	-	10	50
Mild Pain	5	25	7	35
Moderate Pain	15	75	3	15
Amount	20	100	20	100
			P-Value 0,000	

Based on table 4, it can be concluded that there is an influence between giving lavender aromatherapy on menstrual pain (dysmenorrhea), this is shown by the p-value of 0.000.

Discussion

Primary dysmenorrhea is menstrual pain that is found without obvious abnormalities of the genital organs (gynecological disorders) (Frost & Ostrovsky, 2019). Primary dysmenorrhea is purely due to the process of uterine contractions without any underlying disease as a cause. During menstruation, exfoliated endometrial cells release prostaglandins (Marzouk et al., 2013). Prostaglandins stimulate the uterine muscle (womb) and affect the blood vessels causing uterine ischemia (decreased blood supply to the uterus) through contraction of the myometrium (muscle of the uterine wall) and vasoconstriction (narrowing of the blood vessels). Increased levels of prostaglandins have been shown to be found in menstrual fluid in women with dysmenorrhea. Heavy (Ou et al., 2012). The results of this researcher are in line with research (Azima et al., 2015) which states that physically lavender aromatherapy is good for reducing pain, while psychologically it can relax the mind, reduce tension and anxiety and provide calm. A pleasant smell will stimulate the thalamus to release enkephalin which functions as a natural pain reliever and produces a feeling of well-being (Guo et al., 2020). Enkephalins are the same as endorphins, namely endogenous chemicals (produced by the body) that have a similar structure to opioids. Enkephalins are thought to cause presynaptic barriers (neurons that secrete transmitter material) and post synaptic barriers (where the transmitter works) in the dorsal horn (Apay et al., 2012). This process achieves inhibition by enkephalin, namely the inhibition of substance P so that pain is not transmitted or is reduced to the brain. In research conducted (Raisi Dehkordi et al., 2014), lavender aromatherapy can increase parasympathetic nerve activity and calm for at least 10 minutes. The scent of lavender can also modulate the activity of cyclic adenosine monophosphate (cAMP), which has a sedative effect. The aroma of lavender that is inhaled is then captured by the olfactory nerve and sent to the central nervous system and limbic system, namely to the emotional autonomic function (López-Liria et al., 2021). Lavender essential oil used by inhalation, namely inhaling the steam produced by

aromatherapy can reduce the pain felt. , usually this inhalation technique will take effect for approximately 30 to 60 minutes. This method will be more effective if used in combination with other techniques (Apay et al., 2012).

4. CONCLUSION

Dysmenorrhea is pain during menstruation that interferes with a woman's daily activities. Pain management can be done using non-pharmacological methods. One way is by giving lavender aromatherapy. Aromatherapy with lavender essential oil is believed to have a relaxing effect on tense nerves and muscles. Based on the results of the analysis that has been carried out, it can be concluded that there is an effect of giving lavender aromatherapy on reducing dimenorrhea pain. This can be seen in the research results which show a p-value of 0.000, which shows that there is a significant difference between before the lavender aromatherapy intervention was carried out and after the lavender aromatherapy therapy was given using the inhalation technique. It is hoped that the results of this research can be an intervention option to treat the problem of dysmenorrhea pain non-pharmacologically. This research has a sufficient contribution to scientific development with the results of this research increasing knowledge about the natural treatment of dysmenorrhoea.

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