



The Effect of Lavender Aromatherapy Towards Reducing Menatory Pain (Dysmenore) in Midwife Graduate Students in STIKES Mitra Husada Medan

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ABSTRACT

Dysmenorrhea is menstrual pain that is often experienced by women during menstruation. During menstruation there is an increase in prostaglandin level (PGE 2) which can cause pain during menstruation (dysmenorrhea). Dysmenorrhea can be treated in two ways, namely pharmacologically and non-pharmacologically. Aromatherapy Lavender is a non-pharmacological way to relieve menstrual pain (dysmenorrhea). The purpose of this study was to determine the effect of relaxation with lavender aromatherapy on reducing menstrual pain (dysmenorrhea) in undergraduate students of Midwifery at STIKes Mitra Husada Medan. Methods: This research is a type of pre-experimental research with the One Group Pretest-Post test design approach. The sample in this study were students who experienced dysmenorrhea as many as 20 respondents who were taken using purposive sampling technique, the test used was the Spearman Rank test with an error rate of $\alpha = 0.05$. Results: In the study, the average menstrual pain of respondents before giving lavender aromatherapy on a scale of 4 were 15 respondents, while after giving decreased with a scale of 2 were 16 respondents. Based on the results of statistical analysis, it is found that ρ value = $0.001 < \alpha = 0.05$, this shows that H_0 is rejected and H_a is accepted. Conclusion: From the results of the above research, it can be concluded that there is an effect of lavender aromatherapy on reducing menstrual pain (dysmenorrhea) in undergraduate students of Midwifery, STIKes Mitra Husada Medan. Suggestions for students are expected to be able to apply this non-pharmacological therapy to reduce menstrual pain (dysmenorrhea). And suggestions for STIKes Mitra Husada Medan in order to facilitate aromatherapy and a comfortable room for the implementation of therapy for students.

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Kata kunci:

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ABSTRAK

Dismenore adalah nyeri haid yang sering dialami wanita saat menstruasi. Saat menstruasi kadar prostaglandin (PGE 2) meningkat, yang dapat menyebabkan nyeri saat menstruasi (dismenore). Dismenore dapat diatasi dengan dua cara yaitu farmakologi dan nonfarmakologi. Aromaterapi Lavender adalah salah satu terapi nonfarmakologi untuk meredakan nyeri menstruasi (dismenore). Tujuan penelitian ini adalah untuk mengetahui pengaruh relaksasi dengan aromaterapi lavender terhadap penurunan nyeri haid (dismenore) pada mahasiswa Sarjana Kebidanan STIKes Mitra Husada Medan. Metode: Penelitian ini merupakan jenis penelitian pre-Eksperimen dengan pendekatan One Group Pretest-Posttest design. Sampel dalam penelitian ini adalah mahasiswa yang mengalami dismenore sebanyak 20 responden yang diambil dengan menggunakan teknik Purposive Sampling, uji yang digunakan yaitu uji Spearman Rank dengan tingkat kesalahan $\alpha = 0,05$. Hasil: Pada penelitian rata – rata nyeri haid responden sebelum pemberian aromaterapi lavender dengan skala 4 sebanyak 15 responden, sedangkan sesudah pemberian mengalami penurunan dengan skala 2 sebanyak 16 responden. Berdasarkan hasil analisis statistik di dapatkan ρ value = $0,001 < \alpha = 0,05$, ini menunjukkan bahwa H_0 ditolak dan H_a

diterima. Kesimpulan: Dari hasil penelitian diatas dapat disimpulkan bahwa terdapat pengaruh pemberian aromaterapi lavender terhadap penurunan nyeri haid (dismenore) pada mahasiswa Sarjana Kebidanan STIKes Mitra Husada Medan. Saran bagi mahasiswa diharapkan dapat mengaplikasikan terapi nonfarmakologi ini untuk mengurangi nyeri haid (dismenore). Dan saran bagi STIKes Mitra Husada Medan agar dapat memfasilitasi aromaterapi dan ruangan yang nyaman untuk pelaksanaan terapi bagi mahasiswa.



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INTRODUCTION

Every month, a normal woman experiences a reproductive event called menstruation. One of the menstrual problems is dysmenorrhea. Dysmenorrhea is a gynecological disorder that has been investigated for the causes of anxiety and discomfort in adolescent girls. According to the World Health Organization (WHO) in 2013 the incidence of dysmenorrhea was 1,769,425 people (90%), of which 10-15% experienced severe dysmenorrhea. The incidence of dysmenorrhea in the world is very large, on average almost more than 50% of women experience it. According to WHO data in Sumiasih (2019) in Indonesia, the incidence of primary menstrual pain is around 54.89%, and secondary is 45.11%. (Ni Putu Pradnya Dewi, 2022)

According to a 2014 study conducted in Medan, North Sumatra, 85.9% of women experience dysmenorrhea (Journal of Midwifery Maternity, Vol 3, No. 2, October 2018). Dysmenorrhea is a condition of pain or pain in the lower abdomen in the square area, sometimes the pain can extend to the waist, lower back and thighs. Pain on the first or second day of menstruation or in the first 24-36 hours before menstruation. excessive prostaglandin secretion.

If left untreated, menstrual pain can affect daily activities, anxiety, depression and stress (Anurogo & Wulandari, 2015). In Indonesia, the government has written rules for female workers who do not need to work because of menstrual pain, the right to menstrual leave is regulated in Law no. 13 of 2003 concerning Manpower Article 81 paragraph (1) which stipulates that female workers who experience menstrual pain and notify their superiors are not obliged to come to work on the first and second day of menstruation. Despite its high prevalence, dysmenorrhea is often not well treated, and even ignored, by health professionals, pain researchers, and women themselves, who may accept it as a normal part of menstruation (Stella, 2015).

There are two ways to treat menstrual pain, Pharmacological and non-pharmacological. Pharmacologically, menstrual pain can be given with prostaglandin inhibitors, non-steroidal anti-inflammatory drugs (NSAIDS), namely ibuprofen, paracetamol, asekrofenac, diclofenac, meloxicam. Non-pharmacological therapies that can be done include adequate rest, deep breathing (relaxation), regular exercise, massage, yoga, warm compresses and aromatherapy. The benefits of non- pharmacological therapy, among others, can be done easily and cheaply anywhere, including at home. Another non- pharmacological therapy that can reduce pain intensity is aromatherapy. Aromatherapy is a method that uses essential oils to improve physical, emotional and mental health and reduce pain and anxiety (Solehati & Kosasih, 2015)

Aromatherapy forms are packaged in various types, such as essential oils, salt, bath soap, incense and candles. Aromatherapy can be done by inhalation, massage, diffusion,

compresses or immersion. One of the essential oils or essential oils that relieve or relieve pain is Lavender. This lavender increases the alpha waves in the brain, which makes the body relax and reduces the pain that is felt, Lavender aromatherapy can be used to reduce cortisol level and increase estradiol which triggers a decrease in elderly/anxiety. Lavender aroma also regulates the activity of cyclic adenosine monophosphate (cAMP) and has a sedative effect. Inhaled lavender aroma is captured by the olfactory nerves and transmitted to the central nervous system and limbic system, which is an emotional autonomic function (Matsumoto, H. A. (2018).

Lavender aromatherapy is effective in reducing the pain scale of dysmenorrhea. The main ingredients of Lavender are Linalyl Acetate, which helps relax and relax the tense smooth muscle nervous system, and Linalool which acts as a relaxing and sedative agent so that menstrual pain is reduced. When a person inhales lavender aromatherapy, the volatile molecules in the oil are transported to the nasal receptor cells, and when these molecules attach to the nasal hairs, they are transmitted to the brain via sensory channels and then to the limbic system. The hypothalamus is stimulated to release the hormone serotonin and lendorphins, creating a relaxed and calm feeling, so that it can reduce menstrual pain (Najmi, 2011).

Based on a preliminary survey of 209 students of the Bachelor of Midwifery study program level I, II, III and IV by the author at STIKes Mitra Husada Medan, it was found that many still experience dysmenorrhea which affects class activities. From the data obtained, the number of students who experienced dysmenorrhea at level I was 8 students with moderate pain, 5 students with moderate pain at level II, 10 students with moderate pain at level III, and 15 students with moderate pain at level IV. Students who experience menstrual pain accompanied by nausea or severe pain are often treated with warm compresses and medication, namely mefenamic acid. Students who experience menstrual pain also choose to rest. According to the results of interviews with students, almost every month there are students who are not allowed to attend lectures because of menstrual pain. From the initial survey, it was found that there are still many students who do not know how to treat dysmenorrhea, especially the use of lavender aromatherapy to relieve dysmenorrhea (Kinanti, 2013).

Based on the background and data from the initial survey, 38 students of the STIKes Mitra Husada Medan Undergraduate Midwifery Study Program experienced mild to severe dysmenorrhea which could interfere with lecture activities, and many students did not know and understand how to treat dysmenorrhea, especially by means of relaxation using lavender aromatherapy. Therefore, the authors are interested in conducting research on "The Effect of Lavender Aromatherapy on Reducing Menstrual Pain (Dysmenorrhea) in Undergraduate Midwifery Study Program Students STIKes Mitra Husada Medan"

METHOD

The research design used the Pre-Experimental design with the One Group Pretest-Posttest method to see the effect of giving Lavender Aromatherapy on the reduction of menstrual pain (dysmenorrhea) in the Undergraduate Midwifery Study Program students of STIKes Mitra Husada Medan. In this research design, a pretest was conducted first, then treatment was carried out, after that a post test was carried out. During this study only One Group results will not be compared with the control group (comparison). The results of the observation or posttest only provide descriptive information.

Population is all subjects (humans, experimental animals, laboratory data, etc.) to be studied and meet the specified characteristics (Riyanto, 2018)

The population in this study were all students of the Midwifery Study Program at STIKes Mitra Husada Medan both level I, II, III, and IV who experienced dysmenorrhea.

The sample is part of a set of characteristics possessed by the population used in the study. Samples taken from the population must be truly representative and effective. This means that you must be able to measure something that needs to be measured. The selection of samples for line research is in accordance with a minimum sample size of 15 for experimental research. Therefore, the sample in this study amounted to 20 people (Ita Rulyana, 2017)

The sampling method is a sample selection process that is used in research from the existing population so that the number of samples represents the entire existing population (Hidayat, 2011). The type of sampling used in this research is purposive sampling, namely sampling based on certain considerations such as population characteristics or characteristics or criteria that are known and determined previously.

Table 1 Frequency Distribution of Menstrual Pain Before Lavender Aromatherapy was given in Undergraduate Students

No	Pain Scale	Frequency (f)	Percentage (%)
1	0 (No Pain)	-	-
2	1 (Mild Pain)	-	-
3	2 (Slightly more pain)	-	-
4	3 (More painful)	3	15,0
5	4 (Very painful)	17	85,0
6	5 (Mostpainful)	-	-
Total		20	100,0

Source: Data processing results from SPSS 16.0

Based on table 1, it shows that menstrual pain before being given lavender aromatherapy to undergraduate students of Midwifery STIKes Mitra Husada Medan with a total of 20 respondents, the majority of respondents experienced menstrual pain with a scale of 4 (very painful)

The research instrument is a tool used for data collection. Research tools can be in the form of questionnaires (question lists), observations, other forms related to data recording and others (Notoatmodjo, 2017). The tools used in this study were direct observation of respondents using the Wong - Baker Faces Pain Rating Scale and the Aromatherapy Observation Sheet.

The research was conducted at STIKes Mitra Husada Medan, in Watergate IV Market 8 Ex. Kwala Bekala Kec. Medan Johor City Medan, North Sumatra.

RESULTS AND DISCUSSION

Univariate Analysis Results

Univariate analysis in this study was conducted to see the frequency distribution of the variables studied. This data presents the characteristics of respondents based on age, age at first menstruation (menarche), level, menstruation period, time of onset of pain, before treatment and after treatment. (Koes, I, 2015)

Before Treatment

Based on research conducted on November 25, 2022 on undergraduate students of Midwifery STIKes Mitra Husada Medan, the following data were obtained:

Menstrual pain of undergraduate students of Midwifery STIKes Mitra Husada Medan before being given Lavender Aromatherapy. Table 1 Frequency Distribution of Menstrual Pain Before Lavender Aromatherapy was given to Undergraduate Students in Midwifery STIKes Mitra Husada Medan on November 2022.

as many as 17 respondents with a percentage (85.0%), and a minority of 3 people with a percentage (15.0%).

After Treatment

Table 2 Frequency Distribution of Menstrual Pain After Lavender Aromatherapy was given in Undergraduate Students

No	Pain Scale	Frequency (f)	Percentage (%)
1	0 (No Pain)	6	30,0
2	1 (Mild Pain)	3	15,0
3	2 (Slightly more pain)	10	50,0
4	3 (More painful)	1	5,0
5	4 (Very painful)	-	-
6	5 (Mostpainful)	-	-
Total		20	100,0

Source: Data processing results from SPSS 16.01

Based on table 2, it shows that menstrual pain after being given lavender aromatherapy while undergraduate students of Midwifery STIKes Mitra Husada Medan with a total of 20 respondents, the majority of respondents experienced a decrease in menstrual pain with a scale of 2 (slightly more painful) as many as 10 respondents with a percentage (50.0%) and minority pain scale 3 as much as 1 person with a percentage (5.0%).

Results of Bivariate Analysis

Bivariate analysis in this study was conducted to test whether or not the effect of the dependent and independent variables under study.

Table 3 Analysis Results of the Spearman's Test Rank The Effect of Lavender Aromatherapy on Menstrual Pain (dysmenorrhea)

	X – Y	Correlation Coefficient	Sig. (2-tailed) N
Before treatment	4 = 17	0,667	0,001
After treatment	2 = 10	0,667	0,001

Based on table 3, it is known that the majority of respondents' pain scales before treatment were 4 with a total of 17 respondents with a percentage (85.0%) and after treatment the majority of pain scales were 2 as many as 10 respondents with a percentage (10.0%).

Based on the data from the statistical analysis of the Spearman Rank test with the help of the SPSS116.0 application computer program at the 5% error level, calculations were carried out to determine whether there was an effect between the independent variable and the dependent variable. The result of the calculation is that the value is $10.001 < \alpha$ (10.05). If the value $< \alpha$ (10.05) means that there is an effect of giving lavender aromatherapy on the reduction of menstrual pain (dysmenorrhea) among undergraduate students of Midwifery STIKes Mitra Husada Medan. This shows that $0.001 < 0.05$. This H_0 is rejected and H_a is accepted. So the conclusion is that there is a significant effect of giving lavender aromatherapy to reducing menstrual pain (dysmenorrhea) in undergraduate students of Midwifery STIKes Mitra Husada Medan.

DISCUSSION

During menstruation. This pain can interfere with daily activities, reduce quality of life, and have psychological impacts if not properly managed.

One increasingly used non-pharmacological alternative is lavender aromatherapy (*Lavandula angustifolia*). Lavender is known for its relaxing, mild analgesic effects, and its ability to reduce anxiety and stress—factors that contribute to the onset of menstrual pain (LeMone, P. Burke, M, K & Bauldoff, G., 2016).

Research conducted in 2022 has shown that lavender aromatherapy is effective in reducing the intensity of dysmenorrhea pain. This finding is consistent with previous studies that stated that compounds such as linalool and linalyl acetate in lavender have sedative and analgesic effects by reducing pain transmission in the central nervous system and enhancing the relaxation of uterine smooth muscles.

The calming effects of lavender aroma can also stimulate the limbic system in the brain, which regulates emotions and pain, thereby providing a natural analgesic effect. In addition, aromatherapy is generally safe, easy to use, and does not cause serious side effects compared to analgesic drugs such as NSAIDs (Bangun, A, F & Nur'aeni, S. 2013)

The Effect of Giving Lavender Aromatherapy on the Reduction of Menstrual Pain (dysmenorrhea) in Midwifery Undergraduate Students at STIKes Mitra Husada Medan in 2022.

Several studies have indicated that the use of lavender aromatherapy through inhalation for a few minutes (e.g., 15–30 minutes) per day during menstruation can significantly reduce pain level, as measured by the Visual Analogue Scale (VAS), compared to control groups that did not receive therapy. (Agustina. 2018)

However, the effectiveness of lavender aromatherapy is also influenced by factors such as the frequency of use, the concentration of essential oil, and individual preferences toward specific scents. Therefore, this approach should ideally be personalized according to the user's needs and comfort (Rahayu Eryanti. K dan Waode Suiyarti. 2019)

Thus, it can be concluded that lavender aromatherapy is an effective and safe complementary therapy for relieving dysmenorrhea, especially for those who wish to avoid the use of chemical medications. This therapy also supports a holistic approach to pain management, addressing both physical and psychological aspects simultaneously (Nikjou, 2016).

The findings from studies conducted in 2022 demonstrate that lavender aromatherapy significantly reduces the intensity of dysmenorrhea pain. This effect is attributed to active compounds such as linalool, which act on the central nervous system and the limbic system, responsible for regulating pain perception and emotions.

Inhalation of lavender aroma has been shown to reduce stress hormones such as cortisol, inducing a calming effect. Moreover, lavender possesses antispasmodic properties that help decrease uterine muscle contractions—the primary cause of menstrual pain (Kusmiran, E., 2012).

Studies have shown that using lavender aromatherapy for 15–30 minutes daily over 2–3 days during menstruation significantly lowers pain scores based on the Visual Analogue Scale (VAS). Comparisons with control groups (those who received no therapy or a placebo) also demonstrated statistically significant differences, indicating that the effect is not merely due to suggestion (Koes, I. 2014)

Lavender aromatherapy also offers advantages in terms of ease of use, relatively low cost, and minimal side effects, making it a suitable complementary therapy for managing dysmenorrhea, particularly primary dysmenorrhea. Secondary Amenorrhea is when a woman experiences menstruation and then stops for more than 3 months. The causes can be malnutrition and metabolic disorders (Ramadhania, H. N. 2019)

Nevertheless, the effectiveness of aromatherapy depends on several factors, such as: The intensity and frequency of use, The concentration of lavender oil, The individual's response to the aroma (Ziba Raisi) Therefore, while generally effective, a personalized approach is still necessary to achieve optimal therapeutic outcomes.

CONCLUSIONS AND SUGGESTIONS

Conclusions

Several conclusions have been drawn based on the results of the research discussion "The Effect of Lavender Aromatherapy on the Reduction of Menstrual Pain (dysmenorrhoea) in Undergraduate Midwifery Students

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1. Most measurements of pre-lavender dysmenorrhea on a scale of 4 (very painful) were in the moderate pain category.
 2. Most of the measurements of menstrual pain (dysmenorrhea) after being given lavender aromatherapy were on a scale of 2 (slightly more painful), including the category of mild pain.
 3. The results of the analysis using the Spearman Rank test show $P\text{-value } 0.001 < \alpha = 10.05$, then H_0 is rejected and is accepted. This means that lavender has an effect
 4. on reducing menstrual pain (dysmenorrhea) on Undergraduate Midwifery Students STIKes Mitra Husada Medan.

Suggestions

Because this research is an alternative to relieve pain during menstruation, using relaxation therapy with aromatherapy which can be done independently as a method of dealing with menstrual pain (dysmenorrhea), it is recommended to reduce or minimize the use of painkillers.

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