



Original Research

The Effect of Lavender Aromatherapy on Menstrual Pain Intensity (Dysmenorrhea) on the Nursing Students

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ABSTRACT

Introduction: Most of women often experience menstrual period complaints such as menstrual pain or dysmenorrhea. One of the non-pharmacological ways to lower the level of pain in a person experiencing dysmenorrhea or menstrual pain is lavender aromatherapy. Aromatherapy lavender is a method that uses lavender essential oil containing linalool and linalyl acetate which is beneficial to reduce painful menstruation. The purpose of this research is to know the difference of dysmenorrhea intensity before and after giving lavender aromatherapy on the nursing student at a higher nursing education in Surabaya, Indonesia.

Method: This study used pre-pre-experimental design with one group pre-test and post-test design method. The research was done on 103 nursing students who have undergone dysmenorrhea using quota sampling technique. Analysis of the data used Wilcoxon Signed Rank Test with α - levels significance = 0.05 ($p=0.05$).

Results: The results showed that there was a difference in menstrual pain (dysmenorrhea) before and after giving lavender aromatherapy. p value was <0.001 which means there is a difference in menstrual pain intensity (dysmenorrhea) between before and after giving lavender aromatherapy on the nursing student at a higher nursing education in Surabaya, Indonesia.

Conclusions: Lavender aromatherapy is reducing menstrual pain intensity on the nursing student at STIKES Artha Bodhi Iswara Surabaya. Lavender aromatherapy is one of non-pharmacological method that can reduce pain intensity of dysmenorrhea in woman.

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1. INTRODUCTION

Menstruation is a normal thing for women. This is the process of maturing a woman's reproductive system. Most of women often experience menstrual period complaints such as menstrual pain or dysmenorrhea. Many people think that dysmenorrhea will heal by itself. Even though there are many aspects behind the occurrence of this menstrual pain and must be handled wisely so as not to interfere with overall health.

Dysmenorrhea is defined as the presence of painful cramps originating from the uterus that occur during menstruation and is the most common cause of pelvic pain and menstrual disorders (Bernardi, et al., 2017 in Swariningrum, 2019). The incidence of menstrual pain in the world is on average more than 50%. In the United States, Klein and Litt reported a prevalence of dysmenorrhea reaching 59.7%, and in Sweden around 72%. In Indonesia, the incidence of menstrual pain prevalence ranges from 55% among productive age groups. The incidence of menstrual

pain ranges from 45-95% among women of childbearing age with efforts to treat dysmenorrhea, 51.2% with drug therapy, 24.7% with relaxation, and 24.1% with distraction or diversion of pain (Depkes RI, 2010: Rompas, S., & Gannika, 2019). In East Java, the number of young women aged 10-24 years is 56,598 people, and 11,565 people experience dysmenorrhea (1.31%) (BPS Province of East Java 2010 in Puspita, 2018). In Surabaya, the incidence of dysmenorrhea reaches 1.07-1.31% from the number of dysmenorrhea sufferers who visit to the hospital (Ernawati, 2010 in Larasati, Q A., & Alatas, 2016).

Dysmenorrhea is a complaint often experienced by women, this pain can be caused by contractions of the abdominal muscles that occur continuously during menstruation bleeding. These frequent contractions cause the muscles to tense up. Muscle tension does not only occur in the abdominal muscles but also in the supporting muscles of the abdominal muscles in the lower back, waist, pelvis, and thighs to the calves (Najmi, L., 2011).

One of the non-pharmacological ways to reduce pain levels in dysmenorrhea is relaxation. Many types of relaxation are used as non-pharmacological therapies including music relaxation therapy, modified relaxation, and relaxation with aromatherapy (Solehati, T., & Kosasih, E., 2015). One of the essential oils that reduce or eliminate pain is lavender (Solehati, T., & Kosasih, E., 2015). This lavender will increase alpha waves in the brain and these waves will make the body relax and reduce the pain (Sharma, 2009). Aromatherapy can also reduce the level of pain of dysmenorrhea and relieve pain during menstruation because aromatherapy can provide a stimulating effect, a calming sensation, brain, balance, perceived stress, and relaxation on the mind and body that can reduce pain in a person (Najmi, L., 2011).

2. METHODS

The type of study is a pre-experimental design with one group pre-test and post-test design. The research was conducted in the classroom 21 at STIKES Artha Bodhi Iswara (STIKES ABI) on 4th May – 2nd June 2020. The population in this study are 138 female nursing student of STIKES ABI Surabaya who were experiencing painful menstruation (dysmenorrhea) and the samples were selected using quota technique sampling with inclusion criteria: 1) Student who still actively studying in STIKES ABI Surabaya, 2) The female student willing to be a respondent, 3) having regular cycle menstruation. Exclusion criteria: 1) Non-active student, 2) Refuse to be a respondent, 3) already married and or having labor, 3) Student using analgesics when dysmenorrhea, 4) Student who is allergic to odors of aromatherapy.

3. RESULTS

Table 1 shows that the majority of respondents have first menstruation (menarche) at 13 years old as

many as 38 female students (36.9%), meanwhile the

Table 1. Distribution Frequency Based on Age of First Menstruation (Menarche)

Age	Frequency	
	N	%
11 years old	5	4,9
12 years old	23	22,3
13 years old	38	36,9
14 years old	22	21,4
15 years old	15	14,6
Total	103	100

minority of the student have menarche at 11 years old as many as 5 female students (4.9%).

Table 2. Distribution Frequency Based on Age of Respondents

Age	Frequency	
	N	%
18 years old	7	6,8
19 years old	15	14,6
20 years old	26	25,2
21 years old	30	29,1
22 years old	20	19,4
23 years old	5	4,9
Total	103	100

Table 2 shows the age characteristic of the students in this study were 18 to 23 years old. The majority of respondents were late adolescents and early adults. The highest age of respondents was 21 years old as many as 30 students (29.1%) and the lowest age of respondents was 23 years old as many as 5 female students (4.9%).

Table 3 Intensity of Menstrual Pain (Dysmenorrhea) Before Giving Aroma Therapy Lavender

Pain Intensity (Pretest)	Frequency	
	Amount (N)	Percentage (%)
Mild pain (1-3)	2	1,9
Moderate pain (4-6)	47	45,6
Severe pain (7-9)	39	37,9
Very severe pain (10)	15	14,6
Total	103	100

Table 3 shows that majority of the respondents had moderate pain as many as 47 students (45,6%) and it was only 2 students (1,9%) had mild pain.

Table 4 shows that majority of the respondents had intensity of dysmenorrhea at moderate pain (54,4%) after giving aromatherapy of lavender.

Based on table 5, the mean of dysmenorrhea intensity before giving aromatherapy lavender (pre-test) is 6,67 with standard deviation of 2,112. The mean of menstrual pain intensity after being giving aroma therapy lavender (post-test) is 4,18 with a standard deviation of 1.631. Statistical test resulted

Table 4 Intensity of Menstrual Pain (Dysmenorrhea) After Giving Aromatherapy Lavender

Intensity Painful (Posttest)	Frequency	
	N	%
Mild pain (1-3)	39	37,9
Moderate pain (4-6)	56	54,4
Severe pain (7-9)	8	7,8
Total	103	100

Table 5 Analysis of the Difference in Menstrual Pain Intensity Between Before And After Giving Aromatherapy Lavender

Variable	N	Means	Min-Max	std. Deviation	p-value
X ₁ (Pre test)	103	6,67	3-10	2,112	0.000
X ₂ (Post test)	103	4,18	1-8	1,631	

from Wilcoxon Signed rank test with p-value is 0.000 which is less than 0.05. It can be concluded that there is difference in menstrual pain intensity before and after given lavender aromatherapy.

4. DISCUSSION

4.1 The Menstrual Pain (Dysmenorrhea) Intensity Before given Aroma therapy Lavender

In this study, the majority of female nursing students experienced first time menstruation (menarche) at 13 years old. This is in accordance with the research conducted Pustikawaty that menarche can occur after 2 years the onset of puberty is approx 12.5 years old. Age of respondent was varied. The age of female students starts from age 18 to 23 years old, with the majority student aged 21 year. Age 21 years is mature old which is beginning of dynamic range life of human being. They experience change progressively in a manner physique, cognitive nor psychosocial-emotional.

Based on results study, Intensity of dysmenorrhea which were experienced by the respondents was vary from mild to very severe pain before giving aromatherapy of lavender. The intensity of menstrual pain (dysmenorrhea) at majority of respondents were moderate pain before giving lavender aromatherapy at STIKES ABI Surabaya. Intensity of pain was measured using scale painful NRS (Numeric Ratings Scales).

Dysmenorrhea cause painful on lower abdomen, which can radiate to lower back and legs. Painful felt as cramps Which is lost arise or as painful blunt which keep going continuously (Nugroho, Toyphoon & Main, 2014). Pain felt by each individual can be different between one with another (Anurogo, D., & Wulandari, 2011). Pain on dysmenorrhea primarily suspected from womb contraction which stimulated by prostaglandins. Pain felt greater when a clot or piece of tissue from the lining of the uterus through the

cervix (neck womb), especially If cervix narrowed (Nugroho, Toyphoon & Main, 2014).

According to Anurogo, D., & Wulandari (2011), the risk factors of dysmenorrhea were menarche at earlier age, never been pregnant and giving birth, prolonged menstrual period (>7 days), age, alcohol consumption, smokers, less exercise, and stress.

Menstrual pain (dysmenorrhea) is a normal thing in woman during menstruation, mostly women experience dysmenorrhea when menstruation. The intensity of menstrual pain (dysmenorrhea) is different between one person and another, start from mild to very severe pain. In this study, stress is the factor influenced intensity of dysmenorrhea so that pain level is different in the nursing student at STIKES ABI Surabaya.

4.2 The Intensity of Dysmenorrhea After giving Aromatherapy Lavender

Based on results of the study, the intensity of menstrual pain (dysmenorrhea) measured with scale painful NRS (Numeric Ratings Scales) at majority of respondents were moderate pain after being given lavender aromatherapy at STIKES ABI Surabaya. Intensity of dysmenorrhea after giving aromatherapy lavender was vary from mild to severe pain. After giving aromatherapy lavender, there was no student which experienced severe pain. From results study, the student became more relax and the pain felt decrease after given aromatherapy lavender. Aromatherapy usage was easy enough and can be done anytime.

Aroma therapy is method which uses essential oil for increasing health of physique, emotional And spiritual. The other effect is lower the pain and the anxiety (Solehati, T., & Kosasih, E., 2015). Lavender will increase alpha waves in the brain and it will make the body become relax and reduce the pain (Sharma, 2009).

Study done by Pustikawaty found that somebody who inhale aromatherapy of lavender in 15-30 minute, it will relax the muscle tension and opens narrow blood flow so can reduce pain of period. There is a decreasing of pain intensity in dysmenorrhea on student after given aroma therapy lavender during 15 minute. This is caused by lavender aromatherapy can influence brain work which relax the body and reduce the pain sensation.

4.3 The Difference of Menstrual Pain Intensity (Dysmenorrhea) Between Before And After Giving Lavender Aromatherapy

Aromatherapy of lavender influence the intensity of menstrual pain (dysmenorrhea). Pain intensity were measured using NRS scale. it is known that mean value of pain intensity at post-test was lower than the pre-test. The highest of menstrual pain intensity at pre-test was very severe pain and the lowest was mild pain. Intensity of painful period (dysmenorrhea) after being given aromatherapy lavender (post-test) has the highest level of pain at severe pain, and the

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lowest at mild pain. The results of the Wilcoxon Signed Rank test, the test obtained sig $p < \alpha$ then H_0 was rejected and H_1 was accepted which means that there is difference of dysmenorrhea intensity between before and after being given lavender aromatherapy on nursing student at STIKES ABI Surabaya.

In accordance with the theory of Najmi (2011), aromatherapy can be used for reducing pain or removing flavor sick of menstruation. According to theory Sharma (2009), it is because scent enter nose and we relate with cilia that is hairs fine in inside of the nose. Receptors in cilia relate with bulge olfactory Which is at in end channel olfactory. The ends of the olfactory tract are connected with brains. Smell is changed by cilia to impulse electricity Which continued to brain through the olfactory. All impulses reach limbic system. The limbic system is a part from brain Which associated with atmosphere one's heart, emotion, memory, and learning. All smell Which reach system limbic direct chemical effect on the atmosphere heart somebody.

In study Ramadhian, MR, & Zettira (2017) on aroma therapy lavender there is content main that is linalyl acetate And linalool ($C_{10}H_{18}O$), Where linalyl acetate function For relax And relaxes the nervous system and muscles experience tension whereas linalool role as relaxation And sedative so that can lower painful period (dysmenorrhea).

There is difference intensity painful period (dysmenorrhea) before And after given aroma therapy lavender on student STIKES ABI Surabaya. Aromatherapy of lavender give the relax effect so that student feel calm, relax, comfort. Thereby, one of non-pharmacological method that can reduce pain intensity of dysmenorrhea in woman is lavender aromatherapy.

5. CONCLUSION

There is an effect of lavender aromatherapy on reducing intensity of menstrual pain (dysmenorrhea) on the nursing student at STIKES ABI Surabaya.

6. REFERENCES

Anurogo, D., & Wulandari, A. (2011). *Method Sure Overcome Painful Menstruation*. Andi.

cape, Z., I. (2016). Intervention Nursing Independent on Patient Which Experience Painful In House Sick PKU Muhammadiyah

- Craig Hospital. (2013). Aromatherapy. Retrieved from
- Dwi Wulandari, I., & Harmayetty, H. (2021). The Effect of Turmeric Drink and Lavender Aromatherapy Combination on Neck Pain in Batik Craftsmen in Tuban. *Fundamental and Management Nursing Journal*, 4(2), 50–55. <https://doi.org/10.20473/fmnj.v4i2.31357>
- Larasati, Q A., & Alatas, F. (2016). Primary Dysmenorrhea and Risk Factors dysmenorrhea Primary on Teenager. *Journal Majority*, 5(3), 79–84.
- Najmi, L., N. (2011). *Book Clever Menstruation*. wardi.
- Nugroho, Toyphoon & Main, B. I. (2014). *Problem Health Female Reproduction*. Nuha Medic.
- Puspita, N. L. M. (2018). Influence Giving Carrot Juice for Pain Dysmenorrhea in Young Women. *Journal Scientific Midwifery (Scientific Journals of Midwifery)*, 4(1), 14–19.
- Ramadhian, MR, & Zettira, O. (2017). aromatherapy Flower Lavender (*Lavandula angustifolia*) in Lowering Risk Insomnia. *Journal Majority*, 6(2), 61–64.
- Rompas, S., & Gannika, L. (2019). Effects of Lemon (Citrus) Aromatherapy on Reducing Menstrual Pain in Study Program Students Knowledge Nursing Faculty Medical University Sam Ratulangi Manado. *Journal Nursing*, 7(1).
- Sharma, S. (2009). *Book Handle Which Disclose kindly Brief Confidential Aroma therapy*. Charisma.
- Solehati, T., & Kosasih, E., C. (2015). *Deep Relaxation Concepts and Applications Nursing Maternity*. PT. Aditama Rafika.
- Swariningrum, N. I. (2019). *Effectiveness Massage Effleurage And deep breathing Exercise to Decline dysmenorrhea Primary on Mahasantri Daughter Pesma KH. Mr Mansyur UMS*. Doctoral dissertation, Muhammadiyah University Surakarta.