



Research Article

Lavender aromatherapy inhalation to reduce menstrual pain in teenagers

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ABSTRACT

One way to reduce the pain of dysmenorrhea with non-pharmacological therapy is lavender aromatherapy. The purpose of this research is to find out the picture of lavender aromatherapy inhalation in decreasing the intensity of primary dysmenorrhea pain. The research method uses quasi experiment with pre-post test non equivalent control group design. Analysis using independent sample T-test. The number of respondent 30 teenagers who experience dysmenorrhea pain on 1-2 days early menstruation according to inclusion criteria. pain measurement before and after lavender aromatherapy inhalation intervention using the VAS (Visual Analog Scale) pain scale then comparing the difference in the pretest and post test values. The results showed that prior to treatment, the intensity of dysmenorrhea pain was 8.53 and after being treated in the form of lavender aromatherapy inhalation there was a decrease in pain intensity with an average of 3.77. From the statistical results using the Independent Sample T Test, P values <0.002 with 95% C.I. - 1,532 - (- 0.430). This shows that the decrease in pain intensity score of dysmenorrhea after inhalation of Lavender aromatherapy (*Lavendula Augustifolia*) is significant. Conclusion Most teenagers experience a decrease in pain after being given inhalation lavender aromatherapy. Suggestions for further researchers so that larger respondents so the results are more representative.

INTRODUCTION

The incidence of dysmenorrhea or menstrual pain in the world is very high. On average nearly 50% of women experience it, the results of research in America the percentage of dysmenorrhea incidence of 60% is greater than Sweden which is 72% (Anurogo & Wulandari, 2011). Recent studies show that almost 10% of teenagers with dysmenorrhea have school absences and are absent from work 1-3 days per month or experience activity disruption (Dahlan & Syahminan, 2017). The percentage of menstrual pain in Indonesia is around 55% and the prevalence of dysmenorrhea is 45-90% among women of reproductive age. From the results of the PIK-KRR study in Indonesia the prevalence



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rate of dysmenorrhea is 72.89% with primary dysmenorrhea and 27.11% with secondary dysmenorrhea (Larasati & Alatas, 2016)

Teenagers who experience menstrual pain cause their activities to be disrupted so that they cannot carry out activities. Dysmenorrhea in teenagers must be handled even with self-medication or non-pharmacology the goal is to avoid things that are more severe. Dysmenorrhea is also the most common cause of 69.78% absence from school for female students and workers (Larasati & Alatas, 2016).

Treatment of dysmenorrhea is divided into two namely pharmacological and non-pharmacological. Pharmacological treatment includes, among others, the administration of nonsteroidal anti-inflammatory drugs/NSAIDs and the provision of hormonal contraceptive pills (Prawirohardjo, 2016). Handling of non pharmacological dysmenorrhea one of them is by giving lavender aromatherapy, which can be used in treating pain during menstruation because it is believed to calm someone who is experiencing pain, the sedative effect on *Lavandula angustifolia* occurs the presence of coumarin compounds in oil with low content, which consists of 0, 25%. In addition, in a study by Lis-Balchin, 2009 the content of lavender oil consisting of: linalool, linalyl acetate, α -pine, β -pine ne and 1,8-cineole can spontaneously reduce uterine contractions in mice that are experiencing intestinal muscle spasms. So indirectly giving lavender aromatherapy can help eliminate moderate pain (Sarwinanti & Istiqomah, 2019).

RESEARCH METHOD

The research method uses quasi experiment with pre-post test non equivalent control group design. Statistic test uses independent sample T-test. The population in this study were 30 teenagers who experienced dysmenorrhea pain on the first 1-2 days of menstruation. With the sample criteria in this study are teenagers with menarche 10-15 years of age, have never been pregnant and give birth, do not have a history of diseases or abnormalities in the reproductive organs, and have a history of complaints of dysmenorrhea at each menstruation. The data source uses primary data by directly measuring pain before and after lavender aromatherapy inhalation intervention, using the VAS (Visual Analog Scale) pain scale then comparing the

difference between the pretest and post-test values.

RESULT AND DISCUSSIONS

In this table, it can be seen that before being given treatment, the intensity of dysmenorrhea pain was 8.53 and after being treated in the form of lavender aromatherapy inhalation, there was a decrease in pain intensity with average 3.77. From the statistical results using the Independent Sample *T Test*, *P values* < 0.002 with 95% C.I. -1,532 - (- 0.430). This shows that the decrease in pain intensity score of dysmenorrhea after administration of lavender inhalation aromatherapy is significant.

This study aims to determine the effectiveness of inhalation lavender aromatherapy with a decrease in pain intensity in dysmenorrhea. Based on the results of the analysis showed that inhalation of lavender aromatherapy has a significant relationship with a decrease in dysmenorrhea pain score. The mean decrease in pain scores in the lavender group 4.76 ± 0.15 with a *P value* <0.002, this indicates that there was a significant difference in the decrease in pain scores between before and after the inhalation treatment of lavender aromatherapy in teenagers with dysmenorrhea pain on days 1-2 so that the hypothesis can be accepted.

Pain experienced by respondents including complaints such as; felt cramps in the lower abdomen and pain that felt spread to the waist of the thigh or back, no appetite, nausea, body weakness, not strong in activity, causing it to be unable to concentrate on learning. Dysmenorrhea occurs due to the production of prostaglandin levels that cause uterine muscle contractions that are very strong, and before menstruation progesteron levels in the blood will increase, when menstruation occurs then prostaglandin levels in the blood will decrease, so prostaglandin production will cause pain that will tend to decrease or decrease several days during menstruation (Larasati & Alatas, 2016).

In lavender aromatherapy there are main ingredients, namely linalyl acetate, and linalool, where linalyl acetate functions to loosen or relax the nervous system in the tense conditions of the muscles, whereas linalool has benefits for relaxation and sedatives, so that it can cause benefits to reduce the intensity menstrual pain (Kim et al., 2006). One way of giving lavender aromatherapy can be done by

Table 1. Frequency distribution of dysmenorrhea pain intensity before and after inhalation of lavender aromatherapy (*L. augustifolia*).

Aromatherapy	Disemenorea Pain		Pretest-posttest	Δ mean	95% CI	P
	Pretest	Posttest				
Lavender	8,53 \pm 1,397	3,77 \pm 1,247	4,76 \pm 0,15	-1,047	-1,532-(-0,430)	<0.002*

giving inhalation (Yazdkhasti & Pirak, 2016).

The findings of this study state that the inhalation of lavender aromatherapy may influence the reduction in dysmenorrhea pain intensity. When lavender aromatherapy is inhaled, as these molecules are bound to fine hairs on the nose, the molecules in the aromatherapy material will be transferred to the receptor cells in the face. This will then give rise to an electrochemical message that can later be transmitted to the brain's olfactory ducts and then to the limbic system, where the cycle can activate the hypothalamus to produce endorphins and the hormone serotonin. Hormone serotonin has a function to improve mood to be happy, while endorphin works as a natural painkiller because it promotes sense of calm and comfort (Kim et al., 2006). When someone who inhale lavender aromatherapy for 5-10 minutes, it will relax the muscles that experience tension and then can open a narrow blood flow so that it can reduce the intensity of dysmenorrhea pain (Yazdkhasti & Pirak, 2016).

A few drops of lavender can help overcome insomnia, improve mood, and can provide a relaxing effect. Lavender aromatherapy is analgesic, can relieve headaches, muscle aches, and is antibacterial, antifungal, anti-inflammatory, antiseptic, and sedative. Therefore, lavender aromatherapy can be an alternative therapy for the management of post-labor pain in a non-pharmacological manner, so that it can affect the physical and psychological condition of the mother for the better (Karaman et al., 2016).

CONCLUSION

There was a significant relationship in the group given inhalation of lavender aromatherapy to decrease the intensity of dysmenorrhea pain in teenagers.

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