

Comparison Of The Effectiveness Of Lavender Aromatherapy And Progressive Relaxation Techniques On The Sleep Quality Of Pregnant Women In The Third Trimester At The Karangpawitan Public Health Center, Garut Regency In 2025

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ABSTRACT

According to the World Health Organization (WHO), the number of dysmenorrhea cases in 2020 was 1,769,425 individuals, with 90% being female. The prevalence of dysmenorrhea in Indonesia is 54.89% for primary dysmenorrhea and 9.36% for secondary dysmenorrhea. In DKI Jakarta, the prevalence of primary dysmenorrhea is 87.5%. Menstrual pain, also known as dysmenorrhea, occurs due to dysrhythmic contractions of the myometrium. The pain often interferes with daily activities, making its impact on adolescent girls particularly significant. The aim of this study is to determine the effect of green coconut water and effleurage massage on reducing the intensity of primary dysmenorrhea pain in adolescent girls at Dewi Medika Primary Clinic in 2025. This research uses a qualitative method with a case study approach. The sample consisted of two respondents experiencing primary dysmenorrhea, comparing one who received green coconut water and the other who received effleurage massage. The study was conducted in February 2025. The results showed a reduction in pain intensity in adolescents who experienced primary dysmenorrhea after receiving either green coconut water or effleurage massage. The decrease in pain intensity was more effective and occurred more quickly in the adolescent who received the effleurage massage compared to the one who received green coconut water.

Keywords: *Green Coconut Water, Effleurage Massage, Primary Dysmenorrhea, Adolescent Girls*

I. INTRODUCTION

Adolescence is an important developmental phase in which individuals experience progress in cognitive (knowledge), emotional (feelings), social (relationships with others), and moral (values and ethics) aspects. This period is often referred to as a transition from childhood to adulthood. Adolescents play a strategic role in determining the future direction of a nation, as they are the future productive population who will drive development. Therefore, adolescents need to be prepared to become excellent and high-quality human resources. Given the complex changes that occur during this stage, it is important for adolescents to understand themselves well. This developmental period is also vulnerable and challenging, requiring optimal personal health (Wirenviona, 2020).

Dysmenorrhea is a term that refers to pain in the lower abdomen, which sometimes spreads to the waist, lower back, and thighs, and is commonly experienced by adolescent girls before menstruation. Many women, especially those of reproductive age, often experience this menstrual pain. Globally, the incidence of dysmenorrhea is relatively high. For some women, the menstrual pain they experience can be so severe that it interferes with their daily activities. (Indonesian Ministry of Health, 2022).

According to the WHO in 2020, the prevalence of dysmenorrhea is very high, and the prevalence of dysmenorrhea in women across all countries reaches more than 50%. In America, 90% of women suffer from severe dysmenorrhea, which means that 10% to 15% of women suffer from severe dysmenorrhea. Therefore, they cannot do anything, and this has a negative impact on their sexual quality. Even in the United States, dysmenorrhea causes 1.7 million unproductive workdays for women, and 14% of adolescents who suffer from dysmenorrhea often neglect their

daily routines and do not attend school. The incidence of dysmenorrhea according to the World Health Organization (WHO) is 1,769,425 people (90%) women (DIANA NANA, 2024).

In Indonesia, the prevalence of dysmenorrhea is recorded at 54.89% for primary dysmenorrhea and 9.36% for secondary dysmenorrhea. This condition is common among adolescents, with incidence rates ranging from 43% to 93%, and approximately 74% to 80% of them experiencing mild dysmenorrhea. In addition, dysmenorrhea is also experienced by adolescents who suffer from pelvic pain or endometriosis, with an estimated prevalence of 25% to 38%. Between 25% and 38% of sufferers do not respond well to menstrual pain treatment, and endometriosis is found in about 67% of these cases. In Indonesia, 60% to 70% of women experience dysmenorrhea, with about 15% of them reporting interference in their daily activities due to menstrual pain (Wildayani et al., 2023).

In DKI Jakarta, the prevalence of primary dysmenorrhea reaches 87.5%, with 20.48% experiencing mild pain, 64.76% experiencing moderate pain, and 14.76% experiencing severe pain. Meanwhile, the prevalence of secondary dysmenorrhea is recorded at 12.5% (Hartika, 2024). Dysmenorrhea is experienced by around 90% of adolescent girls, with most cases being primary dysmenorrhea caused by the release of prostaglandins, which cause pain. Although dysmenorrhea does not directly endanger health, this condition can have a significant impact on the quality of life of adolescents. The use of herbal ingredients is considered a safe alternative because it has minimal side effects and does not cause dependence. (Kamalah et al., 2023).

II. LITERATURE REVIEW

Dysmenorrhea also affects learning concentration and causes students to fall behind in school. Adolescents who experience menstrual pain tend to show a decline in academic performance compared to those who do not experience dysmenorrhea. This condition also contributes to absenteeism at school and work, with around 13–15% of women reporting at least one absence due to dysmenorrhea, and 4–5% experiencing repeated absences (Fahriani et al., 2023).

Increased magnesium levels in the body can help relax smooth muscles and dilate blood vessels through the process of vasodilation. Green coconut water is known as a rich natural source of calcium, making it a potential alternative for relieving dysmenorrhea symptoms. In addition, the folic acid content in green coconut water also plays an important role in replacing lost blood, as folic acid is an essential element in the formation of red blood cells. Optimal red blood cell production supports smooth blood flow within the body. Good blood flow allows

the body's cells to obtain adequate oxygen and nutrients, making the body stronger in dealing with the pain sensations that arise during dysmenorrhea (Kamalah et al., 2023).

For adolescent girls, non-pharmacological treatment with massage can be an option to relieve dysmenorrhea. Massage refers to the gentle and soothing rubbing of body parts using the entire palm of the hand. Massage therapy can reduce hypoxia, increase oxygen levels in the tissues, thereby reducing pain. The massage method used to relieve dysmenorrhea is effleurage massage (Khairunnisa, 2024).

III. RESEARCH METHODOLOGY

This study applied a qualitative method with a case study approach. The method used was descriptive research, which applied the results of previous studies to determine the conditions before and after the action was taken. The instrument used in this case study was an observation sheet to monitor the duration of dysmenorrhea pain until there was a reduction in pain in adolescent girls. The target of this study was adolescent girls aged 15 to 20 years who experienced menstrual pain. This study involved two samples, where one sample was given green coconut water intervention and the other sample was given effleurage massage.

This study used univariate analysis to describe midwifery care and to determine the effect of coconut water and effleurage massage on the reduction of primary dysmenorrhea pain intensity in adolescent girls at the Dewi Media Primary Clinic in 2024.

IV. RESULT AND DISCUSSION

Pain Observation Sheet Table Comparison Between Green Coconut Water Administration and Effleurage Massage on the Reduction of Dysmenorrhea Pain Intensity

Intervention	Respondent Name	Day	Before Administration		After the Giving	
			Pain Scale	Pain Scale	Pain Scale	Pain Scale
Air Kelapa	Nn. F	1	7	Berat	7	Berat
	Nn. F	2	7	Berat	6	Sedang
	Nn. F	3	6	Sedang	5	Sedang
Massage Effleurage	Nn. H	1	8	Berat	7	Berat
	Nn. H	2	6	Sedang	5	Sedang
	Nn. H	3	5	Sedang	3	Ringan

Based on the table above, it can be explained that in respondent 1, on the first day of assessment, teenager 1 who was immediately given an intervention in the form of coconut water experienced dysmenorrhea pain with a pain scale of 7 (severe pain intensity). On the second day, there was a decrease in the pain scale to 6 with moderate pain intensity. On the third day, the pain scale decreased again to 5 with moderate pain intensity.

Meanwhile, in respondent 2, on the first day of assessment, teenager 2 who was immediately given an intervention in the form of effleurage massage experienced severe pain with a pain scale of 8 before the intervention. After being given the intervention, the pain scale decreased to 7 with severe pain intensity. On the second day, before the intervention, the pain scale was 6 (moderate pain intensity), and after the intervention, the pain scale decreased to 5 with moderate pain intensity. On the third day, after the intervention, the pain intensity decreased from moderate to mild with a pain scale of 3.

Based on these results, the researchers concluded that adolescents with primary dysmenorrhea who received both coconut water and effleurage massage interventions showed a decrease in pain intensity, albeit with different scales and intensities. The results indicate that effleurage massage intervention is more effective in reducing pain intensity.

Reduction in the Intensity of Dysmenorrhea Pain in Adolescent Girls Before and After Coconut Water Administration at the Dewi Medika Primary Clinic in 2024.

Based on the data analysis that has been conducted, it can be seen that in adolescent girls who received coconut water intervention, there was a decrease in the intensity of primary dysmenorrhea pain. Initially, before being given coconut water, the pain scale was 7 with severe pain intensity, whereas after being given coconut water for 3 days, the pain scale became 5 with the pain intensity decreasing to moderate. This is in line with the research by Uci, et al. (2024), which states that the administration of green coconut water can reduce the intensity of dysmenorrhea pain. Green coconut water contains eight chemical components, including carbonic acid, vitamin C, protein, fat, carbohydrates, calcium, and potassium. Calcium and magnesium help reduce muscle tension, including uterine muscles, while vitamin C acts as a natural anti-inflammatory agent that can relieve pain caused by menstrual cramps by inhibiting the cyclooxygenase enzyme, which is involved in the formation of prostaglandins. (Ciptiasrini, 2024).

This study is in line with the findings of Metha et al. (2022), which showed that before the intervention, the average pain level of the respondents (20 people) was 7.85, which is classified as severe pain. After being given 250 ml of green coconut water twice a day for three days during menstruation, the average pain level of the respondents decreased to 4.7, which is classified as moderate pain. A total of 18 out of 20 respondents experienced a decrease in pain scale, while the other two respondents still felt the same level of pain. The Wilcoxon statistical test showed a p -value = 0.000 ($p < 0.05$), indicating that the difference was statistically significant, so the null hypothesis (H_0) was rejected and the alternative hypothesis (H_a) was accepted. Thus, it can be concluded that the administration of green coconut water has a positive effect on reducing the intensity of dysmenorrhea in adolescents at SMPN 003 Arga Makmur, North Bengkulu, in 2022. These findings emphasize the importance of natural therapeutic approaches in treating dysmenorrhea, a condition commonly experienced by adolescents, and open up opportunities for further research on the effectiveness of plant-based therapies in managing menstrual pain. The significant pain-reducing effects of green coconut water indicate its potential as

a safe and effective alternative, despite the need for further studies to strengthen empirical evidence on a broader scale and across diverse populations. (Fahriani et al., 2023).

Another study conducted by Nabilla et al. (2021) also produced similar findings, with a p-value of 0.000 ($p < 0.05$), indicating that drinking green coconut water has an effect on dysmenorrhea pain in adolescents in Ampere Hamlet, Teluti Subdistrict, Central Maluku Regency. Based on these research results, it is recommended that adolescents experiencing dysmenorrhea independently consume green coconut water as an effort to reduce menstrual pain through a non-pharmacological approach. (Pattiiha et al., 2021).

The results of this study are also in line with the findings of Yayuk et al. (2022), who obtained a p-value of 0.000 ($p < 0.05$) in the intervention group and a p-value of 0.008 ($p < 0.05$) in the control group. The study concluded that the administration of green coconut water is effective as a natural therapy for reducing primary dysmenorrhea in adolescent girls at Muhammadiyah University Kudus. (Mundriyastutik et al., 2022).

This finding is consistent with the theory that coconut water contains electrolytes and minerals that can replace fluids and blood lost during menstruation. The electrolytes in coconut water serve to prevent dehydration, while the folic acid it contains plays a role in red blood cell production. Menstrual pain is often caused by an imbalance of prostaglandins, and excessive contractions of the uterus due to prostaglandins cause pain during menstruation. Green coconut water contains vitamins and minerals that can stimulate the production of progesterone in stable amounts (Rismaya et al., 2020).

Based on the results of the study, researchers concluded that the intensity of dysmenorrhea pain can be alleviated through non-pharmacological approaches, such as green coconut water therapy, without relying on painkillers. This is due to the calcium and magnesium content in coconut water, which can relax tense uterine muscles caused by increased prostaglandins, as well as vitamin C, which has anti-inflammatory properties and can relieve pain caused by menstrual cramps. The observation results showed that before coconut water administration, the respondents' pain intensity was 7 (severe pain), and after therapy, the pain scale decreased to 5 (moderate pain). Therefore, it can be concluded that green coconut water administration is effective in reducing the intensity of dysmenorrhea pain in adolescent girls.

Reduction in the intensity of dysmenorrhea pain in adolescent girls before and after receiving effleurage massage at the Dewi Medika Primary Clinic in 2024

Based on the results of the data analysis, it can be seen that adolescents experiencing primary dysmenorrhea who received effleurage massage intervention experienced a decrease in pain scale and pain intensity. Before receiving effleurage massage intervention, the pain scale was 8 with severe pain intensity, whereas after receiving effleurage massage for 3 days on the first day of menstruation, the pain scale decreased to 3 with mild pain intensity on the second and third days. This study is in line with the research conducted by Uci et al. (2024), which showed

changes in pain in the second respondent before and after effleurage massage in the lower abdomen area. Before effleurage massage, the respondents' pain scale was recorded at 7, but after performing effleurage massage for three consecutive days, the pain scale decreased to 3. (Ciptiasrini, 2024).

This study is also in line with the results of research conducted by Zuraida and Missi Aslim (2020), which aimed to determine the effect of effleurage massage on reducing menstrual pain. This study was tested using a T-test with a 95% confidence level ($p < 0.05$). The statistical test results showed a p-value of 0.0005, which indicates that effleurage massage has an effect on reducing menstrual pain in adolescent girls at SMA N 1 Sutera, Pesisir Selatan Regency in 2018 (Zuraida & Aslim, 2020).

This study also supports the findings of Muhammad Amin et al. (2020), who researched the reduction in the pain scale of primary dysmenorrhea in adolescent girls using effleurage massage. The results showed that the p-value before and after effleurage massage therapy was 0.000 (<0.05). In conclusion, effleurage massage therapy has an effect on reducing the pain scale of primary dysmenorrhea in adolescent girls at SMP Muhammadiyah Terpadu Kota Bengkulu. This therapy is effective in relaxing the abdominal muscles and supports the application of the Gate Control Theory, which states that pain fibers transmitted to the brain are smaller and slower than fibers that carry touch sensations (Amin & Purnamasari, 2020).

Research conducted by Uswatun Hasanah and Chusnul Chotimah (2022) on the effectiveness of effleurage massage therapy in reducing menstrual pain among female students at Stikes Abdi Nusantara in 2022 produced the following conclusions: Before the intervention, more than half of the experimental group experienced moderate pain (73.9%), and after the intervention, more than half of the experimental group experienced mild pain (65.2%). Meanwhile, in the control group, before the intervention, more than half of the respondents experienced moderate pain (47.8%), and after the intervention, more than half experienced mild pain (56.5%). The difference in the average intensity of menstrual pain before and after the intervention in the experimental group was 2.30, while in the control group the difference was 1.18. The results of the analysis using the paired sample t-test showed a p-value of $0.000 < 0.05$, which means H_a is accepted and H_0 is rejected, indicating that effleurage massage therapy is effective in reducing menstrual pain in female students at Stikes Abdi Nusantara in 2022. (Hasanah & Chotimah, 2022).

Research conducted by Laela (2023) also shows that effleurage massage therapy is effective in reducing the level of dysmenorrhea pain, with a decrease in pain from severe to mild after therapy. Effleurage massage therapy stimulates the skin, which improves blood circulation, provides a sense of relaxation, and thus can reduce the scale of dysmenorrhea pain. (Anggraini & Mulyanto, 2023).

This study is in line with research conducted by Umi Rosida et al. based on the results of the Wilcoxon test, which showed a p-value of 0.000 ($\alpha=0.05$). The p-value was

<0.05 and <0.01 . The results of this study show that effleurage massage can reduce the dysmenorrhea pain experienced by respondents. Effleurage massage has

provided several benefits, including increasing parasympathetic activity by increasing heart rate, lowering blood pressure, increasing endorphin hormone levels, and increasing heart rate variability. Effleurage massage can also reduce anxiety levels, as well as improve mood, which is a relaxation response that occurs after effleurage massage. This response can influence the reduction of dysmenorrhea pain because the body feels relaxed and there is no anxiety, so dysmenorrhea pain can decrease (Rosida et al., 2024).

Based on the results of the study, researchers concluded that dysmenorrhea pain experienced by adolescent girls can be treated with non-pharmacological methods such as effleurage massage. Effleurage massage therapy can help improve blood circulation, maintain overall health, reduce pain and fatigue, and stimulate the production of endorphins, which relax the body, eliminate toxins, promote health, and balance organ function. Effleurage massage is also effective in reducing pain, stress, and tension, increasing body strength and flexibility, and supporting emotional and mental balance. This therapy can improve sleep quality and repair the structure of bones, muscles, and organs. Observations show that before receiving effleurage massage therapy, the respondents' pain level was measured at 8 on a scale of severe pain intensity, but after three days of therapy, the pain scale dropped to 3 with mild pain intensity.

Based on data analysis, the results of this study indicate that effleurage massage is more effective in reducing dysmenorrhea in adolescent girls compared with the administration of green coconut water. This is because effleurage massage is done by applying gentle pressure on pain points or skin stimulation, which can increase blood circulation, apply pressure, and warm the abdominal muscles, which produces a calming and relaxing effect. While the provision of green coconut water requires a digestive process first before it can have an effect on the body.

V. CONCLUSION

1. There was a decrease in the intensity of dysmenorrhea pain in adolescent girls who had primary dysmenorrhea before and after consuming coconut water.
2. There was a decrease in the intensity of dysmenorrhea pain in adolescent girls who had primary dysmenorrhea before and after receiving effleurage massage therapy.
3. There was a difference in the reduction of pain intensity of primary dysmenorrhea in adolescent girls who were given coconut water and given effleurage massage therapy. The decrease in the intensity of dysmenorrhea pain in adolescent girls who received effleurage massage was more effective and faster than those who consumed coconut water.

RECOMMENDATIONS

1. For Health Workers , One of the efforts that can be made is to educate the public about the dangers of long-term exposure to cigarette smoke,

- both as active and passive smokers. It is important to convey information about the risks of advanced age at first pregnancy (>35 years) for breast cancer.
2. For Future Researchers, Future researchers are encouraged to expand on this study by incorporating additional relevant variables, such as genetic factors, lifestyle, or the public's level of knowledge about early detection of breast cancer, to obtain a more comprehensive picture.

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