




Case Study

The intervention of Lavender Aroma Therapy to Reduce the Pain Intensity of Dysmenorrhea In Adolescent

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ARTICLE INFO	ABSTRACT
<p>Article History: Submit : May 29, 2022 Revised : Nov 6, 2022 Accepted : Dec 18, 2022</p> <p>Keywords: Family health care, Dysmenorrhea, Lavender Aromatherapy</p>	<p>Background: dysmenorrhea is a common problem for women in Indonesia and the world. According to WHO (2017) it is estimated that 90% of women worldwide have experienced dysmenorrhea, and 10-15% of them have experienced severe dysmenorrhea. This condition requires pharmacological and non-pharmacological treatment. One of them gave lavender aromatherapy. Objective: This study aims to determine the effectiveness of applying lavender aromatherapy procedures to clients with dysmenorrhea.</p> <p>Methods: This study used a qualitative design with a case study approach to describe in-depth information and explore clients' problems with dysmenorrhea in fulfilling their comfort needs by using lavender aromatherapy. Variable independent was lavender aroma therapy. The dependent variable was pain level.</p> <p>Results: Giving lavender aromatherapy for three consecutive days within ± 30 minutes as much as 2 x 1 day in the morning and evening was proven to reduce the intensity of dysmenorrhea pain in Ms. B from a scale of 6 to 1, while Ms. Ra experienced a decrease in pain intensity from a scale of 7 into 2. The difference in the final results of the decrease in pain intensity was more due to the difference in the initial pain intensity in the two patients.</p> <p>Conclusion: Non-pharmacological methods with lavender aromatherapy are effective in reducing the intensity of dysmenorrhea pain, so this method can be widely implemented to reduce cases of dysmenorrhea in adolescents.</p>

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Introduction

Every month an average woman will experience a reproductive event called menstruation, namely the shedding of endometrial tissue because no egg is fertilized by sperm. Menstruation can be said to be experienced by adolescent girls,

marked by menarche (first menstruation) until menopause (Hudhariani & Yunani, 2022; Yunianingrum et al., 2018). Generally, menstruation occurs in adolescents at the age of 12 or 13 years, but some adolescents experience menstruation earlier, namely at the age of 8 years or later at the age of 18 years (Fasanghari et al., 2022; Sabrina et al.,



2020). Menstrual events are a natural thing experienced by women, but many women experience complaints during menstruation. A complaint that is often felt is dysmenorrhea (Saud et al., 2018). Dysmenorrhea is a condition of pain or pain in the lower abdomen in the Michaelis square area, and sometimes the pain can extend to the waist, lower back, and thighs (Pramita et al., 2020; Savitri & Hardyanti, 2019). Dyskinesia can occur before, during, or after menstruation. Menstrual pain lasts for one to several days during menstruation. The pain may be colic or persistent and is thought to be due to the contraction of the shedding of the endometrium (Al Shifa & Mahmud, 2021). Dysmenorrhea can cause the inability to carry out daily activities (Dewi Astriana Putri & Ningsih, 2016; Kumalasari, 2012), anxiety, depression, anxiety, and stress (Sri-On et al., 2019). According to Reeder (2013), the absence of adolescents from school due to menstrual pain reaches $\pm 25\%$. WHO (2017) states that 1,769,425 people (90%) women experience dysmenorrhea, with 10-15% experiencing severe dysmenorrhea. In Indonesia, more women who experience dysmenorrhea do not report or visit health workers, but it is estimated that 90% of Indonesian women have experienced dysmenorrhea (Yunita & Viridula, 2021).

The prevalence of dysmenorrhea in Indonesia is 107,673 people (64.25%), consisting of 59,671 people (54.89%) experiencing primary dysmenorrhea and 9,496 people (9.36%) experiencing secondary dysmenorrhea (Agustin et al., 2021). It is estimated that 60%-75% of adolescents experience primary dysmenorrhea. 30%-60% of adolescent girls who experience dysmenorrhea reported 7%-15% unable to go to school (Pardede, S., Tambunan, T., Alatas, H., Trihono, P. P., & Hidayati, 2012; Rimawati et al., 2018; Wardana et al., 2021). Meanwhile,

the incidence of dysmenorrhea among productive Indonesian women ranges from 45% -95% (Sadiman, S., 2017). Many women do not know how to treat menstrual pain, which can cause problems. Handling menstrual pain can be done in 2 ways: pharmacological and non-pharmacological (Aprilyadi et al., 2018; Purnawan et al., 2021). One of the non-pharmacological therapies that are often used in nursing is the provision of lavender aromatherapy because the ingredients in it, such as antidepressants and antibiotics, are believed to reduce anxiety and reduce pain sensations (Hidayangsih et al., 2009). Research conducted by Pustikawati, R. (2016) showed that lavender aromatherapy reduced the pain scale of dysmenorrhea. This is because when a person inhales lavender aromatherapy, the volatile molecules in the oil are carried to the receptor cells in the nose. When the molecule attaches to the nasal hair, an electrochemical message is transmitted through the olfactory tract to the brain and the limbic system. Where will stimulate the hypothalamus to release the hormone serotonin and endorphins hormones that produce a feeling of relaxation and calm?

A preliminary study conducted by researchers in the working area of the Citra Medika Health Center on 10 young women, the results showed that as many as 7 young women (70%) had experienced dysmenorrhea or menstrual pain, and there were only 3 young women or (30%) who did not. desminore. Of the 70% of young women who experience dysmenorrhea, none know how to handle menstrual pain with lavender aromatherapy, in which young women usually use pharmacological drugs, namely analgesic drugs or pain relievers. The nurse's job is to meet the patient's needs comprehensively, so there is a need for independent nurses' duties that aim to provide a sense of security and

comfort. So that it makes researchers interested in conducting a case study of lavender aromatherapy intervention in reducing the intensity of dysmenorrhea in adolescents.

Methods

This study uses a qualitative design to describe in-depth information about fulfilling a sense of comfort using lavender aromatherapy on clients who experience dysmenorrhea. The subjects of this study were individuals with dysmenorrhea who live in the working area of the Citra Medika Health Center, Lubuklinggau. The recruitment of participants was carried out by purposive sampling. The criteria for participants in this study were: middle-aged adolescents with an age range of 14-19 years, female, had a history of primary dysmenorrhea, not allergic to lavender aromatherapy, willing to undergo therapeutic procedures using candles containing lavender essential oil, willing to Do not use analgesic drugs during therapy. This research was conducted in the work area of the Citra Medika Health Center, Lubuklinggau, in April-July 2021. Ethical considerations in this study were carried out by fulfilling the principles of human rights as subjects in the study, which include the right to self-determination; the right to privacy and dignity; the right to anonymity and confidentiality; the right to fair treatment; and the right to protection from inconvenience or loss. Data collection was based on interview guidelines and observation notes to obtain as much information as possible to answer the research objectives. Data collection techniques through in-depth interviews were carried out by making field notes containing descriptions of activities, dates, times, and basic information about the atmosphere, environmental settings, social

interactions, and participant activities during the interview.

Meanwhile, data collection was carried out by observation, namely by directly observing various activities carried out by participants, especially those following the research objectives. The tools used for data collection in this study were interview guidelines, observation notes, and a checklist that had been prepared. Furthermore, the data from interviews, observations, and documentation studies were written in an assessment format and analyzed to find the central problem. Then a non-pharmacological nursing plan was prepared for management—pain relief with relaxation techniques using lavender aromatherapy. At the implementation stage, the researcher carried out directly and observed and documented the patient's response to relaxation therapy procedures with lavender aromatherapy. Data analysis in this study is based on a phenomenological approach. The process of data analysis was carried out throughout the study. It was carried out continuously from the beginning to the end of the study by collecting all data from the results of interviews, observation notes, and field notes of the researcher and then comparing it with the existing literature and assumptions. Analysis of the data used is the qualitative analysis, and the presentation starts from the data collected and then draws conclusions. Research has obtained Ethical Clearance.

Results

The research subjects were two family members who were given the intervention together. Ms. B, 18 years old, is a student at a high school in the city of Lubuklinggau, she is Muslim, ethnically Sumatran, and the address is lubuklinggau. Ms. B said that she had suffered from

dysmenorrhea since her first menstruation, which was when she was 15 years old, pain was like being pricked with a pain scale of 6, the pain felt intermittent, regular menstruation came every month, Ms B did not have a history of chronic diseases in the reproductive system, had habit of eating out and drinking tea and coffee. So far, Ms. B has taken over-the-counter medicines when the pain is unbearable or comes to health facilities such as puskesmas and hospitals. Meanwhile, Ms. Ra (19 years old) also said that she has experienced dysmenorrhea since the beginning of her menstruation, and has no history of chronic diseases in the reproductive system. Ms Ra so far only takes over-the-counter medicine and rarely uses health facilities such as the puskesmas when she is sick. The results of the physical examination of Ms. B blood pressure 130/90 mmHg, pulse: 84 x/minute, breathing 24x/minute, body temperature 36°C, height 154cm, weight 45 kg, headache, pain like being pricked in the area lower abdomen radiating to the buttocks. Pain scale 6. The results of Ms. Ra examination showed blood pressure 100/80 mmHg, pulse: 80 x/minute, breathing 24 x/minute, body temperature 36°C, height 155 cm, weight 50 kg, lower abdominal pain and followed by stomach cramps.

Based on the results of studies conducted on the two families who have children with dysmenorrhea health problems, it is found that there is a match between theory and practice in the field. According to NANDA international nursing diagnoses: definitions & classification 2018-2020 (Herdman, H. T., & Kamitsuru, S. (Eds.), 2017), Problems that are common in the family are: The inability of the family to recognize the problem related to lack of information about the disease and its treatment, the inability of the family to make decisions on the management of the patient related to not knowing the

consequences of the disease, the inability of the family to care for sick family members related to how to care for the patient, the inability of the family to manage the disease. the home environment is related to the family being uncooperative, unable to use existing health facilities in connection with not recognizing the benefits of health services to treat disease, the inability of families to recognize potential occurrences in children related to lack of information about health check schedules, impaired nutritional needs related to disability families caring for sick family members, damage to the management of home maintenance related to the inability of the family to care for a poor home environment healthy, family anxiety related to the inability of the family to recognize health problems.

Nursing diagnoses are data that is collected and then analyzed, as for family nursing diagnoses found in both subjects with a medical diagnosis of desminorrhea in accordance with the guidelines of the Pokja SDKI DPP PPNI (2018) team, namely acute pain, knowledge deficit and self-identity disorder (PPNI, 2019). While family nursing diagnoses that can be enforced by nurses based on the results of the assessment are, among others, discomfort: acute pain related to the inability of the family to care for sick family members and knowledge deficit in the family related to the inability of the family to recognize family health problems (dysmenorrhea). The nursing diagnosis that was enforced on the two research subjects was the same because when the authors conducted an assessment on subjects I and II, the main complaints were also the same, namely experiencing pain during menstruation, and the family did not know the health problems they were currently facing. According to Siregar, R. A., (2020) nursing diagnoses are actual or potential health problems which nurses,

with their education and experience, are able and have permission to deal with. A nursing diagnosis is a clinical assessment of the response of an individual, family, or community to actual or potential health problems/life processes. Nursing diagnoses are the basis for selecting interventions to achieve the goals set by the responsible nurse (Muhith, A., 2015). The diagnosis of self-identity disorder could not be enforced on both subjects because at the time of the assessment there were no supporting data found to formulate a diagnosis on the client's self-identity.

This nursing intervention focuses on the main diagnosis, namely acute pain with the aim that after nursing actions it is expected that the level of pain will decrease and pain control will increase with the outcome criteria based on the SLKI (Indonesian Nursing Outcome Standard), namely increased pain control, increased ability to recognize the cause of pain, ability to use non-medical techniques. Pharmacology increases, pain complaints decrease. The interventions carried out included identification of the location, characteristics, duration, frequency, quality, intensity of pain, identification of pain scales, identification of non-verbal pain responses. Identify factors that aggravate and relieve pain, explain the causes, periods, and triggers of pain, explain strategies to relieve pain with non-pharmacological techniques. Identify the readiness and ability of patients and families to receive information. Give an explanation to the family how to reduce dysmenorrhea pain by using health education materials and media such as posters, leaflets and video simulations containing the meaning of non-pharmacological therapy with lavender essential aromatherapy, benefits, contraindications, materials needed, and steps for administering Aromatherapy with lavender (Bais & Phansopkar, 2021;

Chyquitita et al., 2018). Teach good and comfortable environment modification techniques to patients with dysmenorrhoea pain and their families. Minimize stimuli that come from outside that can exacerbate pain such as noise, stress, etc. Motivating families to take sick family members to the nearest health facility.

The aromatherapy procedure using lavender was carried out for 3 days. The nurse measures blood pressure, pulse and pain scale before the client gets the lavender aromatherapy procedure. Provide explanations to clients and families about how to reduce dysmenorrhea pain by using posters, leaflets and video simulations as well as demonstrating how to give aromatherapy with lavender (Junita et al., 2020; Lauwsen & Dwiana, 2019; Yeni Tri Lestari, 2016). The patient is placed in a relaxed and comfortable position with a quiet and closed room atmosphere, then lavender aromatherapy in the form of candles is lit in the room. The best times to use aromatherapy are in the morning and evening. When the candle is lit by itself the aromatherapy scent of the candle will spread throughout the room, turn it off after 1 hour and the patient will benefit from inhaling it. Inhaling aromatherapy for 20-30 minutes can reduce pain, because in the lavender aroma there are linalool and linalyl acetate compounds as sedatives and have local anesthetic effects, linalool has anti-bacterial and anti-fungal effects. Lavender flower aromatherapy can stimulate sensors, receptors, and in the end can affect other organs so that it has a strong effect on emotions because of its fragrant and fresh aroma. The purpose of giving this lavender aromatherapy is to reduce or stop the transmission of pain impulses, relieve muscle tension and provide a sense of relaxation, accelerate blood circulation so that pain is reduced (Hidayati, 2019; Nurak

et al., 2020). Then measure the pain scale after the client does therapy.

On the 3rd day of the lavender aromatherapy procedure, before being given the action, Miss B looked grimacing, the pain was like being pricked, after being given the action in the form of lavender aromatherapy, Miss B said the pain was reduced, the patient looked more relaxed and calm with a pain scale of 6 being scale 1. Meanwhile, Miss Ra before being given therapy looks grimacing and holding back the pain while holding her stomach and seems to be breaking out in cold sweat. After being given lavender aromatherapy, the patient, Miss Ra, said that the abdominal contractions were reduced, the pain felt reduced, the client was more relaxed with a pain scale of 7 to a scale of 2. This shows a significant difference in the level of pain in the client before and after being given lavender aroma therapy.

Discussion

The author will describe the differences or gaps between theoretical reviews and case reviews of the application of aromatherapy procedures using lavender to Ms. B (subject I) and Ms. Ra (subject II) with dysmenorrhea. When conducting an assessment on Ms. B, the author found some congruence between the data obtained in the field related to health problems with the theory referring to Indonesia, P. P. N., (2016) that the limitations of the characteristics of the diagnosis of acute pain are anxiety, complaining, disturbed sleep patterns, itching, symptoms of distress, anxiety, irritability, inability to relax, dissatisfied with the situation, crying, feeling cold, feeling less than happy with the situation, feeling warm, feeling hungry, feeling uncomfortable, whimpering, and afraid. The characteristics limitations found by researchers focusing on acute pain were

anxiety, complaining, restlessness, inability to relax, feeling uncomfortable, groaning, and afraid. The client does not experience all symptoms of dysmenorrhea pain such as disturbed sleep patterns, itching, symptoms of distress, irritability and is not satisfied with the situation because the client often overcomes pain by going to the health center and consuming over-the-counter drugs such as analgesics to reduce pain. Meanwhile, Ms. Ra has abdominal pain accompanied by stomach cramps. The client also does not experience all the symptoms of dysmenorrhea because the pain limit can still be tolerated and the client often takes over-the-counter medicines such as mefenamic acid to reduce the pain of dysmenorrhea. The results of research by Nurwana, N., Sabilu, Y., & Fachlevy, A. F. (2017), Ardela, M., Yuliwar, R., & Dewi, N. (2017) and Ismaningsih, I., Herlina, S., & Nurmaliza, N. (2019) Explains that Menstrual pain is a gynecological complaint that most commonly occurs in women, this is due to an imbalance of the hormone progesterone in the blood, causing abdominal pain caused by uterine muscle spasms. Women who experience dysmenorrhea produce 10 times more prostaglandins than women who are not dysmenorrheal. Prostaglandins cause increased uterine contractions, and in excess levels will activate the large intestine so that it can cause diarrhea. Although dysmenorrhea is common in adolescents, if it is not treated properly it will interfere with activities and cause adolescents to experience disturbances in activities of daily living (Agustin, I., Kumalasari, I., & Jaya, H. (2021), retrograde menstruation (menstruation that moves backwards), infertility (Kumalasari & Jaya, 2021) ectopic pregnancy, cysts and infections (Nugroho & Hartati, 2019)

From the results of the study, it was known that both Ms. B and Ms. Ra had

experienced dysmenorrhea after the first menstruation with complaints of stabbing pain or abdominal cramps that radiated to the buttocks, cold sweats, restlessness, inability to relax and feeling uncomfortable. Based on the signs and symptoms experienced by the two clients, Ms. B and Ms. Ra experienced primary dysmenorrhea, which is menstrual pain without any pathological disturbances and is more common than secondary dysmenorrhea. Primary dysmenorrhea can also be aggravated by factors such as the length of the menstrual interval, nutritional factors, marriage, and heredity. The results of Larasati, T. A., & Alatas, F. (2016) research showed that two out of three women who suffer from primary dysmenorrhea have a family history of primary dysmenorrhea.

From the data collection results, the authors found two nursing problems in Ms. B and Ms. Ra. The first nursing diagnosis is comfort disorders: pain (dysmenorrhea) related to the inability of the family to care for sick family members. The author made the diagnosis because when interviewed, two clients and their families did not know how to treat family members with dysmenorrhea. In addition to taking over-the-counter drugs and going to the Puskesmas, the family also did not know how to do therapy using lavender aromatherapy so that pain could be reduced. Various works of literature prove that appropriate complementary therapy in patients can reduce dysmenorrhea pain in women (Mahyuni et al., 2021; Syafaah, 2020).

In recognizing health problems, the author plans to provide health education about dysmenorrhea and procedures for giving lavender aromatherapy. In addition, the authors also provide posters, leaflets, and simulation videos to families so that families can repeat the information that researchers have conveyed through the

posters, leaflets, and simulation videos. The author also provides opportunities for families to ask questions and discuss their health problems. In making the right decision, the author motivates families to use health facilities to control family members' health conditions because the use of over-the-counter drugs that are taken without looking at the rules for use will have an impact on health conditions in the future. In caring for family members, the authors demonstrate therapeutic procedures using lavender aromatherapy and motivate families to do therapy regularly. In addition, the authors will also observe the pain scale of the client's general condition before and after therapy to see the effectiveness of therapy for patients with dysmenorrhea. Relaxation by inhaling lavender aromatherapy can reduce pain during menstruation. Lavender aromatherapy is effective in reducing the pain of dysmenorrhea. The main ingredients of lavender oil are linalool, linalin acetate, cineol, camphor, osimena, and tannins, which can relax the working system of the nerves and tense muscles. Lavender as aromatherapy has sedative, hypnotic and anti-neurodepressive effects that are good for humans. In addition, the technique used in giving lavender aromatherapy significantly reduces dysmenorrhea pain (Pramita et al., 2020; Yeni Tri Lestari, 2016; Yuanto et al., 2018).

In carrying out nursing actions, the two clients (Ms. B and Ra) followed all of the author's directions from assessment to evaluation of demonstrations of giving aromatherapy lavender because the desire to heal was very high, so the author was straightforward to motivate clients, and teach how to provide therapy using essential oils. Lavender, clients, and families can do therapy independently and regularly. So that on the third day of the meeting, the client and family can do it

independently. On the third day, the author also provided re-education regarding the action of giving aroma therapy lavender. After the author performed nursing care repeatedly, the family became more skilled and could do it independently.

At the evaluation stage, the authors assess the success of the actions that the authors take, using SOAP for each diagnosis found in the family. On the first day of action before giving therapy, Miss B's pain scale was 6. After receiving therapy, it was reduced to 5. On the second day, the pain scale was 5. After being given therapy, it became 3, and on the third day, the pain scale was three. After being given aromatherapy lavender for \pm 30 minutes, the pain reduced on a scale of 1. Meanwhile, in Miss Ra, On the first day before the treatment, the pain scale was reduced to 6 after receiving therapy, then on the second day, the pain scale was 6. After being given therapy, it became 4; on the third day, the pain scale was four. After being given therapy using aromatherapy lavender for \pm 30 minutes, the pain was reduced on a scale of 2. There was a decrease in the pain scale in both clients because they felt relaxed, and there was a decrease in pain intensity by 5 points. It can be concluded that giving aromatherapy lavender can reduce pain intensity if it is done consistently. So that the results obtained are maximized, both clients are willing to reduce eating fatty foods, not drink coffee, and exercise diligently during therapy. This is because consuming fatty foods can also increase the hormone prostaglandin, which can cause pain in the lower abdomen or dysmenorrhea (Hrehová & Mezian, 2021; Zhuo et al., 2020). Likewise, with drinking coffee. The results of Wuling, F. (2018) research show that respondents who consume coffee experience dysmenorrhea nine times higher percentage than those who do not. This is possible because the

caffeine content in coffee causes a vasoconstrictive effect that causes pelvic pain and causes symptoms of dysmenorrhea.

This study showed that the pain scale decreased significantly due to the aromatherapy of lavender essential oil. This is explained by Hidayati, R. B. N. (2019), Pradnya Dewi N. P. et al. (2020) that lavender aromatherapy contains Nerol which has a fragrant aroma. So that it can provide a calming effect, reduce depression, stress, and tension, relax nerves and reduce pain. In addition to the nerol content, Lavender contains citral, eugenol, geraniol, citronellol, farnesol, linalool, and phenylethyl alcohol. Lavender aromatherapy can foster feelings of calm in the body, mind, and spirit, reduce anxiety, improve mood, and increase the strength of alpha and beta waves, indicating increased relaxation. Of all aromatherapy, lavender is considered the most beneficial of all the essential oils and is known to have a calming effect. When Lavender aromatherapy is inhaled, volatile molecules will carry aromatic elements that stimulate memory and emotional responses that cause calm and relaxation and accelerate blood flow (Nurul & Paramitha Amelia, 2020). Lavender also strengthens the nervous system and has a calming sedative effect, lavender aromatherapy slows the activity of the nervous system, relaxes and improves mood, and in lavender, some analgesics can reduce pain (Meronda, 2018; RIREN, 2021).

Evaluation is the stage where comparing the results of the actions taken with the result criteria set in planning and assessing whether the problem has been entirely resolved, only partially, or not resolved. The effectiveness of the actions and the achievement of the identified outcomes are continuously evaluated as an assessment of the patient's status. The

evaluation must occur at every step in the nursing process and the plans implemented by NANDA international nursing diagnoses: definitions & classification 2018-2020 (Herdman, 2014). The evaluation was prepared using the SOAP method, where subjective (S) were things the family found subjectively after nursing interventions were carried out. The two objectives (O) are the things that the nurse finds objectively after nursing interventions are carried out, the three analyzes (A) are the results that have been achieved concerning the goals related to nursing diagnoses, the last is planning (P) is the planning that will come after seeing the response from the family at the evaluation stage (Ain et al., 2019). The results of the evaluation after implementing nursing for three days for Ms. B (subject I) from April 22 to April 24, 2021, and 3 days for Ms. Ra (subject II) from April 26 to April 27, 2021, the author can conclude that nursing problems can be resolved entirely, where the final evaluation obtained by Ms. B after applying lavender aroma therapy for three consecutive days, on the first day of pain scale six after applying lavender aroma therapy the pain scale dropped to 5, on day 6 two pain scales from 5 to 3.

Moreover, on the third day, the pain scale from 3 dropped to 1. While the pain scale for Ms. Ra was from 7 to 6 on the first day, on the second day, the pain scale was 6 to 4, and on the third day, the pain scale was 4 to 2. The results of this study are in accordance with the results of research conducted by Pustikawati, (2016), showing that lavender aromatherapy reduces the pain scale of dysmenorrhea. This is because when a person inhales lavender aromatherapy, the volatile molecules in the oil are carried to the receptor cells in the nose. When the molecule attaches to the nasal hair, an electrochemical message is transmitted through the olfactory tract to the brain and the limbic system. Where will

stimulate the hypothalamus to release the hormone serotonin and endorphins hormones that produce a feeling of relaxation and calm. In evaluating the two subjects, the author also did not find any obstacles because both subjects already understood the actions taken, so when the authors did the evaluation, the authors got maximum results.

Authors Contributions

The author carries out tasks from data collection, data analysis, making discussions to making manuscripts

Conflicts of Interest

There is no conflict of interest

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References

- Agustin, I., Kumalasari, I., & Jaya, H. (2021). PEMBERDAYAAN PEREMPUAN DALAM PENCEGAHAN KEPUTIHAN PATOLOGIS DENGAN TEORI HEALTH BELIEF MODEL (HBM) DI LAPAS PEREMPUAN KELAS IIA PALEMBANG. *Martabe: Jurnal Pengabdian Kepada Masyarakat*, 4(2), 380–388.
- Ain, S. N., Riyanto, A. A., & Lestari, R. H. (2019). Pengaruh metode brain gym dalam meningkatkan kemampuan mengingat anak usia 5-6 tahun. *Ceria (Cerdas Energik Responsif Inovatif Adaptif)*, 2(5), 197–201.
- Al Shifa, A. R., & Mahmud, N. U. (2021). Pengaruh Kompres Hangat terhadap Penurunan Intensitas Dismenore pada Remaja Putri di Madrasah Aliyah DDI Mangkoso Kabupaten Barru. *Window*

- of *Public Health Journal*, 1086–1094.
- Aprilyadi, N., Feri, H. J., & Ridawati, I. D. (2018). Efektifitas hypnotherapy terhadap penurunan nyeri dismenorea pada siswi sma. *Jurnal Perawat Indonesia*, 2(1), 10–19.
- Bais, A., & Phansopkar, P. (2021). Impact of pilates training versus progressive muscle relaxation technique on quality of life in menopausal women-a comparative study. *Indian Journal of Forensic Medicine & Toxicology*, 15(1), 7–11.
- Chyquitita, T., Winardi, Y., & Hidayat, D. (2018). Pengaruh brain gym terhadap konsentrasi belajar siswa kelas xi ipa dalam pembelajaran matematika di sma xyz Tangerang. *Polyglot*, 14(1), 39–52.
- Dewi Astriana Putri, & Ningsih, S. (2016). Hubungan Pijat Bayi Dengan Kualitas Tidur Bayi. *Jurnal Penelitian Kesehatan*, 1(1), 67–69.
- Fasanghari, M., Larki, M., Esmaeili-Hesari, A., Alirezaei, S., Ramezanzadeh, M., & Tafazoli, M. (2022). The Effect of Aromatherapy Massage with Lavender Oil on the Severity of Primary Dysmenorrhea among university Students: A Randomized Clinical Trial. *Journal of Midwifery and Reproductive Health*, 1–8.
- Herdman, T. H. (2014). *Nursing diagnoses definitions and classification 2015-2017*. John Wiley & Sons, Ltd.
- Hidayangsih, P. S., Tjandrarini, D. H., Mubasyiroh, R., & Supanni. (2009). Faktor-faktor yang BERhubungan dengan PERilaku BEResiko Remaja di Kota Makassar. *Pusat Teknologi Intervensi Kesehatan Masyarakat, Badan Litbang Kesehatan*, 1(1), 88–98.
- Hidayati, R. B. N. (2019). *Pengaruh aromaterapi lavender terhadap penurunan nyeri dismenore pada mahasiswa kebidanan Universitas Ngudi Waluyo*. Universitas Ngudi Waluyo.
- Hrehová, L., & Mezian, K. (2021). Non-pharmacologic treatment of insomnia in primary care settings. *International Journal of Clinical Practice*, 75(6), e14084.
- Hudhariani, R. N., & Yunani, A. R. (2022). THE EFFECT OF MASSAGE EFFLEURAGE WITH LAVENDER AROMATHERAPY ON THE INTENSITY OF DYMENORORE PAIN IN ADOLESCENT WOMEN IN THE PABELAN HEALTH CENTER. *Jurnal Ilmu Dan Teknologi Kesehatan STIKES Widya Husada*, 13(2).
- Junita, E., Virgo, G., & Putri, A. D. (2020). Pengaruh Pemberian Aroma Terapi Lavender Terhadap Insomnia Pada Lansia Di Desa Koto Tuo Wilayah Kerja Puskesmas 2 Xiii Koto Kampar. *Jurnal Ners*, 4(2), 116–121.
- Kumalasari. (2012). *Kesehatan Reproduksi Untuk Mahasiswa Kebidanan Dan Keperawatan*. Salemba Medika.
- Kumalasari, I., & Jaya, H. (2021). Penerapan Health Belief Model dalam Tindakan Pencegahan Keputihan Patologis. *HIGEIA (Journal of Public Health Research and Development)*, 5(3).
- Lauwsen, R., & Dwiana, A. (2019). Pengaruh Aroma Terapi Lavender Terhadap Peningkatan Kualitas Tidur Mahasiswa Fakultas Kedokteran Universitas Tarumanagara. *Tarumanagara Medical Journal*, 2(1), 152–159.
- Mahyuvi, T., Perbawani, D. R., & Suwardianto, H. (2021). The Effect Of Breathing Relaxation And Lavender Aromatherapy On Insomnia In The Elderly. *Interest: Jurnal Ilmu Kesehatan*, 10(1), 38–45. <https://doi.org/https://doi.org/10.37341/interest.v0i0.292>
- Meronda, H. M. P. (2018). *HUBUNGAN TINGKAT STRES DENGAN KEJADIAN*

DYSMENORRHEA PRIMER PADA REMAJA PUTRI DI SMAN 8 KENDARI TAHUN 2018. Poltekkes Kemenkes Kendari.

- Nugroho, N., & Hartati, I. (2019). PENGARUH EDUKASI MENSTRUASI MELALUI WHATSAPP TERHADAP SELF CARE DISMENOORE PADA REMAJA PUTRI SMA DI KOTA BENGKULU. *Journal of Nursing and Public Health*, 7(1), 88–93.
- Nurak, M. A., Leric, M. D. C., Tibuludji, P., Muntasir, M., & Refli, R. (2020). Effectiveness of Lavender (*Lavandula angustifolia*) and Jasmine (*Jasminum officinale*) Aromatherapy on the Intensity of Dysmenorrhea in Student of Faculty of Public Health, Universitas Nusa Cendana, Kupang. *Journal of Maternal and Child Health*, 5(03), 429–435.
- Nurul, A., & Paramitha Amelia, K. (2020). *INHALASI AROMATERAPI LAVENDER DENGAN PENURUNAN INTENSITAS NYERI DISMENOOREA PADA REMAJA.*
- Pardede, S., Tambunan, T., Alatas, H., Trihono, P. P., & Hidayati, E. L. (2012). *Konsensus Infeksi Saluran Kemih pada Anak.* Ikatan Dokter Anak Indonesia (IDAI) Unit Kerja Koordinasi (UKK) Nefrologi.
- PPNI. (2019). *Standar Intervensi Keperawatan Indonesia: Definisi dan Tindakan Keperawatan* (Edisi 1). DPP PPNI.
- Pramita, A., Sutema, I. M. P., & Putri, D. W. B. (2020). The Effect of Lavender Aromatherapy on Dysmenorrhoea Students in Institute of Health Science Medica Persada Bali. *J Pharm Sci Appl*, 2(1), 8–16.
- Purnawan, I., Hidayat, A. I., Sutrisna, E., Alivian, G. N., & Wirakhmi, I. N. (2021). Efficacy of Listening to Murattal in Reducing the Pain Experienced by ICU Patients. *Jurnal Keperawatan Soedirman*, 16(3).
- Rimawati, Suwardianto, H., & VW, A. (2018). Resilience of Knowledge and Perception Skills on the First Aid on Employees. *The 2nd Joint International Conferences*, 2(2), 535.
- RIREN, K. (2021). *PENGARUH PEMBERIAN AROMATERAPI BUNGA LAVENDER TERHADAP INTENSITAS NYERI HAID PADA REMAJA PUTRI.* Universitas Muhammadiyah Mataram.
- Sabrina, E. J., Sanjaya, R., & Sagita, Y. D. (2020). Effect Of Lavender Oil Aromaterapy On Menstrual Pain In Students AT SMPN18 PESAWARAN In 2020. *Biomedical Journal of Indonesia*, 6(3), 96–103.
- Saud, N. H., Arsyad, A., Usman, A. N., Rafiah, S., Ahmad, M., & Tamar, M. (2018). *The effectiveness of aromatherapies with lavender and cinnamon essential oils on prostaglandin E2 levels in adolescent girls with primary dysmenorrhea.*
- Savitri, R., & Hardyanti, O. (2019). THE Effectiveness Of Lavender Aromatherapy In Reducing The Level Of Dysmenorrhea In Adolescent Girls. *Journal of Maternity Care and Reproductive Health*, 2(3).
- Sri-On, J., Vanichkulbodee, A., Sinsuwan, N., Rojsaengroeng, R., Kamsom, A., & Liu, S. W. (2019). Disaster preparedness among Thai elderly emergency department patients: a survey of patients' perspective. *BMC Emergency Medicine*, 19(1), 58.
- Syafaah, L. A. (2020). *LITERATURE REVIEW: PERBEDAAN EFEKTIFITAS ANTARA TERAPI SEFT DAN AROMATERAPI LAVENDER TERHADAP PENURUNAN TEKANAN DARAH PADA PENDERITA HIPERTENSI PRIMER.*
- Wardana, K. E. L., Triguno, Y., & Wulandari, N. K. A. (2021). Difference In Knowledge Between Primigravida And Multigravida Mothers About The

Danger Signs Of Pregnancy At Seririt 1 Health Center. *Journal of Applied Nursing and Health*, 3(2 SE-Articles), 136–140.

<https://doi.org/10.55018/janh.v3i2.26>

- Yeni Tri Lestari, R. (2016). Pengaruh Pemberian Lavender Aromatherapy Terhadap Penurunan Insomnia Pada Lanjut Usia Di UPT Panti Werda Mojopahit Mojokerto. *Jurnal Ilmiah Keperawatan*.
- Yuanto, H. H., Bakar, A., & Astuti, P. (2018). PENGARUH KOMBINASI SENAM KAKI DAN AROMATERAPI TERHADAP ABI DAN TINGKAT STRES PADA PENDERITA DM DI PUSKESMAS JAJAG: The Influence Of Combination Of Foot Gymnastic And Aromatheraphy To Abi And Stress Levels In Dm Patients In Jajag Health Center. *Jurnal Ilmiah Keperawatan (Scientific Journal of Nursing)*, 4(2), 131–140.
- Yunianingrum, E., Widyastuti, Y., & Margono, M. (2018). The effect of warm compress and aromatherapy lavender to decreasing pain on primary dysmenorrhea. *Jurnal Kesehatan Ibu Dan Anak*, 12(1), 40–49.
- Yunita, A., & Viridula, E. Y. (2021). Pengaruh Massage Counterpressure terhadap Penurunan Nyeri Haid pada Remaja Putri di SMAN 2 Pare Kediri. *Jurnal Bidan Komunitas*, 4(2), 45–52.
- Zhuo, K., Gao, C., Wang, X., Zhang, C., & Wang, Z. (2020). Stress and sleep: a survey based on wearable sleep trackers among medical and nursing staff in Wuhan during the COVID-19 pandemic. *General Psychiatry*, 33(3). [https://doi.org/10.1136 / gpsych-2020-100260](https://doi.org/10.1136/gpsych-2020-100260)