IHS
ISSN: 2798-7094
Innovation in Health for Society

***Submitted***
21/7/2021
***Revised***
24/7/2021
***Accepted***
2/8/2021
***Published***
2/8/2021

**SHORT CLINICAL REVIEW**

# Innovation in management of dysmenorrhea: A nursing approach

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https://doi.org/10.31603/ihs.5312

**Abstract**
Dysmenorrhea is abdominal pain caused by uterine cramps that occur during menstruation. The pain is caused by the onset of menstruation and lasts several hours to several days until it reaches the peak of pain. However, many people still do not know about the management of dysmenorrhea. This causes an increase in abdominal pain which often interferes with daily activities. Therefore, this review is structured to describe the various treatments for dysmenorrhea. The results of this review can be used as part of the education of patients who complain of dysmenorrhea and also as an innovation development in the field of reproductive health.

**Keywords:** Innovation; dysmenorrhea; nursing approach; abdominal pain; nursing care

## Introduction

Dysmenorrhea is pain during menstruation that commonly occurs over some time (Bernardi, Lazzeri, Perelli, Reis & Petraglia, 2017). The term dysmenorrhea (dysmenorrhea) comes from the word in ancient Greek (greek). The word comes from dys which means difficult, painful, or abnormal: meno, moon, rhea, flow, or current. Briefly, dysmenorrhea is defined as complex menstrual flow or painful menstruation. Dysmenorrhea is abdominal pain caused by uterine cramps during menstruation (Itani et al., 2022). The onset of menstruation causes pain and lasts a few hours to several days until it reaches the peak of pain. Dysmenorrhea pain generally occurs 1-3 years after menarche, during adolescence, or age 15-18. Many people complain about this condition, but few know how to treat it (Kural, Noor, Pandit, Joshi & Patil, 2015; Ju, Jones & Mishra, 2014). The following will provide comprehensive management of dysmenorrhea that can be used for practice in the community:

## Pharmacological Therapy

Administration of Analgesic Drugs

Analgesic drugs will be needed to relieve pain due to dysmenorrhea. Analgesic drugs include Ibuprofen, mefenamic acid, and aspirin. Side effects of using analgesic drugs include gastrointestinal side effects, dyspepsia, bloody diarrhea, and symptoms of irritation to the gastric mucosa.

Non-steroidal Anti-Inflammatory Drugs (NSAID)

NSAIDs will inhibit the synthesis of prostaglandins and improve symptoms of dysmenorrhea. It is recommended for menstruating women to consume during or shortly before the onset of pain three times per day, from the first day to the third day. Side effects of using this drug can cause symptoms of indigestion, bleeding, or severe kidney or liver damage (Marjoribanks, Ayeleke, Farquhar & Proctor, 2015; Oladosu, Tu & Hellman, 2018).

Hormonal Therapy

This therapy will suppress ovulation. This is temporary, intending to enable dysmenorrhea sufferers to carry out work while menstruating without any disturbance. One of them is by giving one of the contraceptive pills. However, the resulting side effects can cause nausea, headache, water retention, and vaginal bleeding and can cause venous thromboembolism and cervical cancer if used in the long term (Ho, Logan & Chua, 2023).

**Non-Pharmacological Therapy**

Non-pharmacological treatment is often an alternative when women experience dysmenorrhea to reduce pain intensity. These non-pharmacological treatments include:

Deep Breath Relaxation Technique

Breath relaxation techniques in reducing pain lie in the physiology of the autonomic nervous system, which is part of the peripheral nervous system that maintains the homeostasis of the individual's internal environment. The effect of natural breath relaxation techniques that are carried out for 15 minutes can relax the body in general and provide a sense of comfort so that the intensity of the pain felt gradually disappears. Deep breathing relaxation techniques that are done repeatedly will create a sense of comfort. This sense of comfort will ultimately increase a person's tolerance for pain (Kanchibhotla, Subramanian & Singh, 2023; López-Liria et al., 2021).

Warm Compress

A warm compress is one of the skin stimulation. Warm compresses can increase muscle relaxation, reduce pain due to spasm or stiffness, and provide a local feeling of warmth when done periodically. Warm compresses on the lower abdomen during menstrual pain are expected to reduce pain intensity when a warm compress occurs, dilating blood vessels which cause increased blood circulation and capillary pressure. However, if a warm compress is used for 1 hour or more, it can cause redness and stinging (Jo & Lee, 2018; Ke et al., 2012).

Consume Dark Chocolate

Dark Chocolate contains antioxidants from phenols and flavonoids, calcium, potassium, iron, omega three and six, and high magnesium, which can reduce menstrual pain in women. While the magnesium content gives a lang effect by putting pressure on the blood vessels and will help regulate the entry of calcium into the smooth muscle cells in the body so that it can affect the contraction, stress, and relaxation of the uterine smooth muscle. Chocolate stimulates the release of endorphins, a natural hormone produced by the brain that produces feelings of joy (good mood). Chocolate contains tryptophan, an essential amino acid the brain needs to produce serotonin. Serotonin is a neurotransmitter that regulates mood, the brain's "happy chemical" (Najafi, Khalkhali, Moghaddam Tabrizi & Zarrin, 2018; Onieva-Zafra et al., 2020).

Classical Music Therapy

Music therapy is one of the nurses' independent actions in pain management; various types of music that are effective in pain management are classical music. Because classical music has a tempo that ranges from 60-80 beats per minute in harmony with the human heartbeat. However, the provision of music therapy is a type of music that must follow the client's preferences, while the Indonesian people with the majority of Javanese tribes, acceptance of classical music is not following the culture when applied in Indonesia, especially the Javanese people (Fernández-Martínez, Onieva-Zafra & Parra-Fernández, 2019).

Aromatherapy

Aromatherapy uses plant essential oil extracts to improve mood and health. The mechanism of action of aromatherapy treatments in the body occurs through 2 physiological systems: the body's circulation and the olfactory system. There are several aromatherapy examples: Lavender and Lemon (Citrus) Aromatherapy. Lavender flowers contain several ingredients, such as; essential oil, alpha-linalool, borneol, and linalyl acetate, which is helpful as a relaxation and sedative for pain relief therapy (primary dysmenorrhea). Aromatherapy lemon (Citrus) contains limeone 66-80 geranil acetate, neutral, terpene 6-14%, pinene 1-4%, and mercyne. The limeone component in lemon aromatherapy can inhibit the prostaglandin working system from reducing pain (Lee, Lee, Khalil, Lim & Lim, 2018; Song et al., 2018).

Distraction and Physical Exercise

Exercise or physical exercise can affect steroid hormone levels in the blood of women of reproductive age (Dehnavi, Jafarnejad & Kamali, 2018; Armour et al., 2019). And can increase levels of endorphins which can affect pain. Exercise or physical exercise functions as a natural sedative produced by the brain that produces a sense of comfort and reduces pain during contractions (Matthewman, Lee, Kaur & Daley, 2018). The benefits of stretching exercises are improving physical fitness, optimizing grasping, training, and performance in various forms of trained movement, improving mental and physical relaxation, promoting the development of body awareness, reducing the risk of joint sprains and muscle injuries (cramps), reducing the risk of back injury and reducing muscle pain and muscle tension, and reducing pain during menstruation (dysmenorrhea) for women

Gymnastics can be done in the morning or evening; both have their respective advantages and still benefit the body's health. Exercise in the morning benefits the body to be more energetic and improves mood or mood because, in the morning, the brain releases endorphins, hormones that stimulate feelings of happiness. Whereas in the afternoon, exercise is carried out more intensely because the strength and endurance when exercising are higher in the afternoon than in the morning. The review concludes that although dysmenorrhea is frequently seen as a secondary manifestation of several distinct gynecological conditions, it manifests itself in most women as a primary illness. The increased uterine contractility and hypersecretion of prostaglandins that are associated with dysmenorrhea are the root causes of the accompanying pain. Even though it is associated with a lower quality of life, primary dysmenorrhea has a favorable prognosis and is relatively common among young women. In other cases, the primary symptom of dysmenorrhea is endometriosis or adenomyosis, which are associated with subsequent forms of the condition. Based on the clinical history and the physical examination, a diagnosis can be made and confirmed by ultrasonography. Ultrasonography is also very helpful in ruling out several secondary causes of dysmenorrhea, such as endometriosis and adenomyosis. The non-steroidal anti-inflammatory medicines can be taken by themselves or in combination with oral contraceptives or progestins as one of the therapeutic choices.

Medication is frequently employed in the treatment of the period discomfort that is caused by primary dysmenorrhea. Prostaglandin is one of the substances that can be decreased by medication, which can attenuate its effects. Non-steroidal anti-inflammatory drugs, more often known as NSAIDs, are pain relievers that effectively reduce the discomfort associated with menstruation. Women who suffer from specific diseases are not allowed to take NSAIDs and should consult their doctor to choose which pain treatment would work best for them. Several hormonal medications can make periods lighter and less painful or entirely suppress periods. Most of these hormonal medications are birth control methods, including estrogen, progesterone, or simply progesterone. Some of these treatments only include progesterone. Primary dysmenorrhea can be treated with various birth control methods, including tablets, patches, or vaginal rings. The intrauterine device, also known as an IUD, is another method of hormonal birth control that has been shown to reduce the amount of menstrual flow and, in rare cases, entirely end menstruation.

## Conclusion

The treatment group of dysmenorrhea can be used as an innovative technology to relieve the pain. This is important as the people living in the community need this knowledge. Nurses and other healthcare professionals should promote the finding via intensive health education. However, future studies are still needed to evaluate the treatment effectiveness.


## Acknowledgment

The authors thank the people who contributed to the study's support.


## References


Armour, M., Ee, C. C., Naidoo, D., Ayati, Z., Chalmers, K. J., Steel, K. A., de Manincor, M. J., & Delshad, E. (2019). Exercise for dysmenorrhoea. The Cochrane database of systematic reviews, 9(9), CD004142. https://doi.org/10.1002/14651858.CD004142.pub4

Bernardi, M., Lazzeri, L., Perelli, F., Reis, F. M., & Petraglia, F. (2017). Dysmenorrhea and related disorders. F1000Research, 6, 1645. https://doi.org/10.12688/f1000research.11682.1

Dehnavi, Z. M., Jafarnejad, F., & Kamali, Z. (2018). The effect of aerobic exercise on primary dysmenorrhea: a clinical trial study. Journal of education and health promotion, 7, 3. https://doi.org/10.4103/jehp.jehp_79_17

Fernández-Martínez, E., Onieva-Zafra, M. D., & Parra-Fernández, M. L. (2019). The impact of dysmenorrhea on quality of life among spanish female university students. International journal of environmental research and public health, 16(5), 713. https://doi.org/10.3390/ijerph16050713

Ho, O. F. H., Logan, S., & Chua, Y. X. (2023). Approach to dysmenorrhoea in primary care. Singapore medical journal, 64(3), 203–208. https://doi.org/10.4103/SINGAPOREMEDJ.SMJ-2021-303

Itani, R., Soubra, L., Karout, S., Rahme, D., Karout, L., & Khojah, H. M. J. (2022). Primary dysmenorrhea: pathophysiology, diagnosis, and treatment updates. Korean journal of family medicine, 43(2), 101–108. https://doi.org/10.4082/kjfm.21.0103

Jo, J., & Lee, S. H. (2018). Heat therapy for primary dysmenorrhea: a systematic review and meta-analysis of its effects on pain relief and quality of life. Scientific reports, 8(1), 16252. https://doi.org/10.1038/s41598-018-34303-z

Ju, H., Jones, M., & Mishra, G. (2014). The prevalence and risk factors of dysmenorrhea. Epidemiologic reviews, 36, 104–113. https://doi.org/10.1093/epirev/mxt009

Kanchibhotla, D., Subramanian, S., & Singh, D. (2023). Management of dysmenorrhea through yoga: a narrative review. Frontiers in pain research (Lausanne, Switzerland), 4, 1107669. https://doi.org/10.3389/fpain.2023.1107669

Ke, Y. M., Ou, M. C., Ho, C. K., Lin, Y. S., Liu, H. Y., & Chang, W. A. (2012). Effects of somatothermal far-infrared ray on primary dysmenorrhea: a pilot study. Evidence-based complementary and alternative medicine : eCAM, 2012, 240314. https://doi.org/10.1155/2012/240314

Kural, M., Noor, N. N., Pandit, D., Joshi, T., & Patil, A. (2015). Menstrual characteristics and prevalence of dysmenorrhea in college going girls. Journal of family medicine and primary care, 4(3), 426–431. https://doi.org/10.4103/2249-4863.161345

Lee, M. S., Lee, H. W., Khalil, M., Lim, H. S., & Lim, H. J. (2018). Aromatherapy for managing pain in primary dysmenorrhea: a systematic review of randomized placebo-controlled trials. Journal of clinical medicine, 7(11), 434. https://doi.org/10.3390/jcm7110434

López-Liria, R., Torres-Álamo, L., Vega-Ramírez, F. A., García-Luengo, A. V., Aguilar-Parra, J. M., Trigueros-Ramos, R., & Rocamora-Pérez, P. (2021). Efficacy of physiotherapy treatment in primary dysmenorrhea: a systematic review and meta-analysis. International journal of environmental research and public health, 18(15), 7832. https://doi.org/10.3390/ijerph18157832

Marjoribanks, J., Ayeleke, R. O., Farquhar, C., & Proctor, M. (2015). Non-steroidal anti-inflammatory drugs for dysmenorrhoea. The Cochrane database of systematic reviews, 2015(7), CD001751. https://doi.org/10.1002/14651858.CD001751.pub3

Matthewman, G., Lee, A., Kaur, J. G., & Daley, A. J. (2018). Physical activity for primary dysmenorrhea: a systematic review and meta-analysis of randomized controlled trials. American journal of obstetrics and gynecology, 219(3), 255.e1–255.e20. https://doi.org/10.1016/j.ajog.2018.04.001

Najafi, N., Khalkhali, H., Moghaddam Tabrizi, F., & Zarrin, R. (2018). Major dietary patterns in relation to menstrual pain: a nested case control study. BMC women's health, 18(1), 69. https://doi.org/10.1186/s12905-018-0558-4

Oladosu, F. A., Tu, F. F., & Hellman, K. M. (2018). Non-steroidal anti-inflammatory drug resistance in dysmenorrhea: epidemiology, causes, and treatment. American journal of obstetrics and gynecology, 218(4), 390–400. https://doi.org/10.1016/j.ajog.2017.08.108

Onieva-Zafra, M. D., Fernández-Martínez, E., Abreu-Sánchez, A., Iglesias-López, M. T., García-Padilla, F. M., Pedregal-González, M., & Parra-Fernández, M. L. (2020). Relationship between diet, menstrual pain and other menstrual characteristics among spanish students. Nutrients, 12(6), 1759. https://doi.org/10.3390/nu12061759

Song, J. A., Lee, M. K., Min, E., Kim, M. E., Fike, G., & Hur, M. H. (2018). Effects of aromatherapy on dysmenorrhea: a systematic review and meta-analysis. International journal of nursing studies, 84, 1–11. https://doi.org/10.1016/j.ijnurstu.2018.01.016