



## THE EFFECT OF ABDOMINAL MASSAGE AND KUNYIT ASAM HERBS TO REDUCE PRIMARY MENSTRUAL PAIN (DYSMENORRHEA)

### PENGARUH TERAPI PIJAT PERUT DAN HERBAL KUNYIT ASAM TERHADAP PENURUNAN NYERI HAID (DISMENOIRE) PRIMER

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#### ABSTRACT

**Background:** Menstrual pain (dysmenorrhea) is a cramp in the lower abdomen that occurs during menstruation, while menstrual pain that is experienced without any abnormality in the reproductive organ is called primary dysmenorrhea. Primary dysmenorrhea case experienced by the patient is complaints of pain in the lower part, sometimes spreading to the waist and feeling like pressure or squeezing which occurs within 1-2 days of menstruation. **Purpose:** Determine the effect of abdominal massage therapy and tamarind turmeric herbs on reducing primary dysmenorrhea. **Case analysis:** A case study for treating menstrual pain using abdominal massage and herbal methods. Abdominal massage therapy is performed on the abdominal area and herbal therapy is given to the patient, namely herbal turmeric (*Curcuma longa* Linn.) and tamarind fruit which have analgesic, antipyretic, and anti-inflammatory effects. **Result:** Turmeric and tamarind contain active compounds curcumin and anthocyanin which work together to inhibit cyclooxygenase (COX) reactions so that they can inhibit or reduce inflammation and uterine contractions which cause menstrual pain. The treatment for primary dysmenorrhea is abdominal massage therapy 14 times, once every 2 days for 30 days. Meanwhile, tamarind turmeric herbal therapy is given 2 times a day for 7 days before menstruation and the first 3 days during menstruation with a combination dose of 10 grams of turmeric rhizome and 5 grams of tamarind fruit. **Conclusion:** Abdominal massage therapy and tamarind turmeric herbs affect reducing menstrual pain in the case of primary dysmenorrhea.

#### ABSTRAK

**Latar belakang:** Nyeri haid (dismenore) adalah kram pada perut bagian bawah yang terjadi saat menstruasi, adapun nyeri haid yang dialami tanpa disertai adanya kelainan organ reproduksi disebut dengan dismenore primer. Kasus dismenore primer yang dialami pasien adalah keluhan nyeri diperut bagian bawah terkadang menyebar ke pinggang dan terasa seperti ditekan atau diremas yang timbul sejak 1-2 hari menstruasi datang. **Tujuan:** Mengetahui pengaruh terapi pijat perut dan herbal kunyit asam terhadap penurunan dismenore primer. **Analisis kasus:** Studi kasus pengobatan nyeri haid dengan pijat perut dan metode herbal. Terapi pijat perut dilakukan pada daerah perut dan diberikan terapi herbal yaitu herbal kunyit (*Curcuma longa* Linn.) dan buah asam jawa yang mempunyai efek analgetik, antipiretik, dan anti inflamasi. **Hasil:** Kunyit dan asam jawa mempunyai kandungan senyawa aktif kurkumin dan anthocyanin yang bekerja sama dalam menghambat reaksi siklooksigenase (COX) sehingga dapat menghambat atau mengurangi terjadinya inflamasi serta menghambat kontraksi uterus yang menyebabkan nyeri haid. Penanganan dismenore primer dilakukan terapi pijat perut sebanyak 14 kali terapi yaitu 2 hari sekali selama 30 hari. Sedangkan terapi herbal kunyit asam diberikan 2 kali sehari selama 7 hari sebelum menstruasi dan 3 hari pertama saat menstruasi dengan dosis kombinasi rimpang kunyit 10 gram dan buah asam jawa 5 gram. **Kesimpulan:** Terapi pijat perut dan herbal kunyit asam memberikan pengaruh dalam menurunkan nyeri haid pada kasus dismenore primer.

#### Case Study Study Kasus

#### ARTICLE INFO

Received 19 July 2022

Revised 13 October 2022

Accepted 10 February 2023

Available online 11 November 2023

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**Keywords:**

Abdominal massage therapy, Dysmenorrhea, Turmeric acid herbs

**Kata kunci:**

Terapi pijat perut, Dismenore, Herbal kunyit asam



## INTRODUCTION

Menstrual pain, also known as *dysmenorrhea*, is a gynecological disorder that is not harmful to health but, if left untreated, can interfere with daily activities and cause discomfort. Adolescent girls often feel *dysmenorrhea*, where adolescence is a transition period between childhood and adulthood. Adolescent girls who have experienced menstruation often complain of menstrual pain (*dysmenorrhea*) with varying symptoms (Sanctis *et al.*, 2016). During menstruation, pain can occur from uterine cramps called menstrual pain (*dysmenorrhea*). There are two types of *dysmenorrhea*, namely primary *dysmenorrhea* and secondary *dysmenorrhea*. Primary *dysmenorrhea* occurs without any underlying organic disease or due to specific disorders. Secondary *dysmenorrhea* occurs because of an underlying disease or gynecological pathologies such as endometriosis, ovarian cysts, and others. For many women, experiencing menstrual pain or *dysmenorrhea* becomes a detrimental condition impacting the quality of life related to health and productivity. Hence, *dysmenorrhea* can also cause considerable economic losses related to medical costs and decreased productivity (Larasati and Alatas, 2016).

According to research by the *World Health Organization* (WHO), the incidence of *dysmenorrhea* is relatively high worldwide. The average occurrence of *dysmenorrhea* in young women is between 16.8 and 81%. The highest prevalence of *dysmenorrhea* is often found in adolescent women, estimated between 20 and 90%. About 15% of adolescents are reported to experience severe *dysmenorrhea*. Based on the Indonesian Ministry of Health in 2016 the prevalence of adolescent girls in Indonesia who experience pain events is around 55%, with 60 – 85% in adolescence (Wulanda *et al.*, 2020).

In traditional Chinese medicine, *dysmenorrhea* is caused by obstructed Qi and blood flow, which can cause pain. The differentiation of menstrual pain syndrome or *dysmenorrhea*, is Qi and blood stagnation, damp and cold accumulation, hot and damp obstruction, Qi and blood deficiency, and kidney and liver deficiency (Liu *et al.*, 2013). Management of menstrual pain can be done in two ways pharmacology and non-pharmacology. Pharmacologically by taking anti-pain medications such as mefenamic acid, paracetamol, and others. Non-pharmacological treatments include massage, herbs, acupuncture, nutrition, and others.

According to Rahayu *et al.* (2017), relaxation in the form of massage is one of the most effective ways to overcome *dysmenorrhea*. Massage is one of the activities used by emphasizing the limbs using specific techniques useful for improving health, such as reducing pain and improving blood circulation (Khalid and Madvin, 2021). Based on research conducted by Afra (2019), there was a significant decrease in the level of *dysmenorrhea* after being given an abdominal massage. Thus, if someone feels menstrual pain, especially in the abdomen, management can be done through abdominal massage.

In addition to abdominal massage, *dysmenorrhea* can be managed by consuming herbs. Traditional medicines are materials or ingredients in the form of plant materials, animals, minerals, medicinal preparations (Jelinek), or a mixture of these materials that have been used for generations for treatment and can be applied in accordance with applicable norms in the community (Ministry of Health, 2017). Herbal drinks often consumed include sour turmeric, which is believed to reduce *dysmenorrhea*.

Turmeric is one of the herbal plants that, besides being used as a cooking spice, can also be used as a natural medicine because it contains active ingredients that function as analgesics, anti-inflammatory agents, and antipyretics. While tamarind is believed to be a source of antioxidants because it is rich in phytonutrients, it also has activity as an antibacterial, anti-inflammatory, and antioxidant (Nurbaiti, 2018) due to the content of flavonoids, tannins, alkaloids, anthocyanins, and citric acid, which have the benefit of reducing primary *dysmenorrhea* pain. Curcumin in turmeric and anthocyanin in tamarind can also inhibit the cyclooxygenase (COX) reaction, reducing inflammation, so uterine contractions and menstrual pain will be reduced.

It has been proven in studies that have been conducted that turmeric extract can help overcome *dysmenorrhea* in adolescents during menstruation. Women commonly consume sour turmeric during menstruation to help relieve pain (Army *et al.*, 2018). This is in accordance with Anugrahhayu *et al.* (2018), who found that there is a significant difference between before and after giving a combination of turmeric and tamarind in cases of *dysmenorrhea*. Based on the background of the above problems, few studies still examine the combination of massage and herbs, so researchers are interested in conducting case studies on primary *dysmenorrhea* with the use of abdominal massage and tamarind and turmeric herbs.

## CASE STUDY

Case analysis is traditionally derived from the results of the patient's history. Case analysis starts with observation, smell and hearing, and patient complaints. Case studies were conducted on patient with menstrual pain who were given abdominal massage therapy 14 times at intervals of 2 days, once every 30 days, and not during menstruation. Sour turmeric herbal therapy was given two times a day after meals at a dose of 100 ml for seven days before menstruation and the first three days of menstruation.

The patient is a female aged 25 years and the patient's status is unmarried. The patient is the first child of four siblings. The patient's current profession is accounting. The patient is Muslim and resides in Surabaya. During observation, the patient was conscious, with a worried facial expression and sad eyes-slow movements. The patient has a pale complexion.

The patient's body is thin, with a BMI of 17.6, including the underweight category, characterized by a height of 165 cm, a body weight of 48 kg, and the patient's upper arm circumference of 21.5 cm. The patient's head and neck positions are symmetrical. The patient's position of the lips, ears, and eyes is balanced, and he does not use glasses. The patient does not use vision or hearing aids.

Based on tongue observations made on the patient before therapy, a fat tongue shape was obtained, the tongue muscles were pale pink, there was a fissure in the middle of the tongue and there were also tooth poulitices on the right and left. The tip of the patient's tongue is red, and the tongue membrane is white and thick. The patient had no body or strong oral odor on olfactory and auditory examinations. No fecal examination was performed. On hearing examination, the patient's voice was loud. The patient did not cough and did not talk much.

The patient complained of menstrual pain that felt like pressure or squeezing in the lower abdomen, sometimes spreading to the waist. The pain has been felt since the age of 12 and usually the pain appears on the first to the third day of menstruation. During menstruation, the dark red blood clots comes out a lot. The pain is described based on the *Nurmeric Rating Scale (NRS)*, with a scale of 7. The pain decreases after a warm water compress, indicating the presence of cold pathogens. The entry of cold pathogens into the body causes the flow of Qi to be blocked, so that the flow of Qi and Xue can not flow smoothly and even become frozen. If the flow of Qi and Xue is not smooth, it can cause pain. Dark red menstrual blood and many clots indicate blood stasis or cold pathogens. Additional the patient complained include fatigue and abdominal and chest tightness.

Examination of the patient's general complaints, namely complaints in the lower abdomen, the patient likes a cool room, the patient often consumes oily and fried foods and likes salty and soupy flavors, the patient likes to consume cold drinks such as ice, the patient does not sweat easily, and when thirsty, The the patient's bowel movements are routine once a day. Feces are shaped with a yellowish-brown color and have no pungent odor. The the patient's urination is normal, has a clear yellow color, has no pungent odor, and has a large volume. The patient has a habit of sleeping with a fan. The workroom uses air conditioning, periods of sleep  $\pm$  6 hours. The patient's environment is humid because it is not directly exposed to the sun.

Examination of particular complaints is obtained in the spleen organ. There is easy fatigue. In the stomach organ, there is abdominal and chest tightness. There is menstrual pain in the lower abdomen in the kidney organ, sometimes spreading to the waist. In the liver, there is menstrual pain. Vaginal discharge with a white color, odor, abundance, and watery appearance comes out when tired or before and after menstruation.

The results of pressing on the Shu and Mu points are obtained can be seen in Table 1. In the organs of the lungs, spleen, kidneys, and liver, pressure is obtained when pressed, while in the stomach and kidneys, pressure is obtained when pressed. In the pulse examination, Cun, Guan, and Chi felt deep and weak, with the number of beats being 60 and 65 times per minute, respectively (Table 2).

**Table 1.** Shu and Mu examination

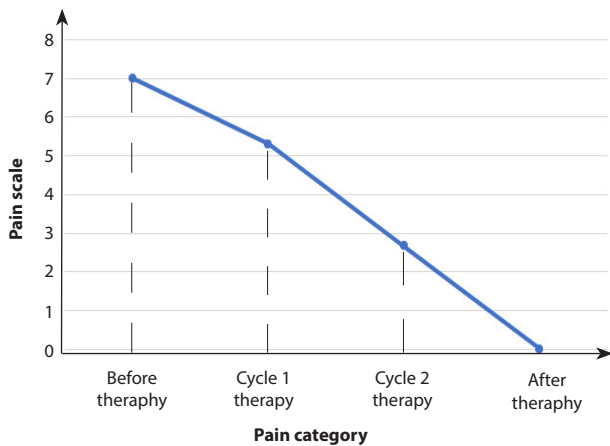
Organ	Shu point	Mu point
Lungs	Easy to press	Easy to press
Colon	No complaints	No complaints
Spleen	Good pressure	No complaints
Stomach	Pressive pain	Pressive pain
Heart	No complaints	No complaints
Small Intestine	No complaints	No complaints
Kidney	Good pressure	Pressure tenderness
Bladder	No complaints	No complaints
Pericardium	No complaints	No complaints
Sanjiao	No complaints	No complaints
Liver	Good pressure	No complaints
Gall Bladder	No complaints	No complaints

**Table 2.** Pulse check

Pulse	Right	Left
Cun	64x/min, shallow, normal, strong	63x/min, shallow, normal, strong
Guan	69x/min, shallow, normal, strong	67x/min, shallow, normal, weak
Chi	60x/min, deep, normal, weak	65x/min, deep, weak normal

## RESULT

In this case study, menstrual pain scale measurements were taken before and after therapy using the NRS. The pain scale felt by the patient is 7 out of 1-10. Menstrual pain is felt on the first to the third day of menstruation and is accompanied by blood clots. The patient also complained of fatigue and chest and stomach tightness. The average results of decreased menstrual pain, in this case, can be seen in Figure 1.



**Figure 1.** Graph of average data results of menstrual pain reduction

Based on the results of abdominal massage therapy and acid-turmeric herbal therapy for cases of menstrual pain (Figure 1), it was found that menstrual pain decreased from before therapy, namely with a pain scale of 7 in the severe pain category. In the first cycle of therapy, the average results with a pain scale showed a decrease in the pain scale to 5.3 and were included in the moderate pain category. In the second cycle of therapy, the average results obtained with the pain scale showed a decrease of 2.67 and were included in the mild category. After therapy, the patient did not feel menstrual pain because she was not menstruating. Additional complaints felt by the patient, namely fatigue and chest and stomach tightness, are no longer felt.

## DISCUSSION

The leading cause of patient experiencing complaints of menstrual pain is the presence of cold and moist pathogens. The patient often consume cold drinks such as ice, have sleeping habits using fans, work rooms that use air conditioning, and humid home environments that cause cold and moisture to accumulate. The entry of cold and damp pathogens into the body causes the flow of Qi, blood, and Jin Ye not to flow smoothly. Cold and damp pathogens are Yin pathogens and quickly weaken Qi and disrupt Qi circulation (Maciocia, 2015). Cold pathogens cause freezing, clumping, and constriction, and Qi, Xue, and Jin Ye cannot flow smoothly and even become frozen. Pathogens are moist and water-derived, so they are cold, freezing, and easy to spread. The flow of Qi, Xue, and Jin Ye that is not smoothly circulating can cause pain (Maciocia, 2015). Based on the syndrome differentiation, the patient's menstrual pain is the accumulation of cold and dampness. The therapeutic principle is to reduce pain by expelling the pathogens of cold and dampness and to promote the flow of Qi and blood (Maciocia, 2015).

Massage therapy is performed by rubbing and pressing using limb movements such as hands, fingers, elbows, and/or other tools on the surface of the body that provide stimulation and relaxation effects, smooth the circulatory system and lymph (lymph), relieve muscle pain, reduce headaches, improve the immune system, and improve concentration ability. Massage has five basic massage techniques, namely effleurage, petrissage, friction, tapotement, and vibration (Ministry of Health, 2018). Each of the basic massage techniques has different benefits.

The massage performed on the abdomen uses three basic techniques, namely effleurage, petrissage, and friction. The effleurage movement is a rubbing motion using the palm or the pads of the fingers, which is useful for relaxing the muscles and nerve endings, increasing blood circulation, and warming the area to be massaged. Petrissage is a squeezing or massaging motion using the palm or fingers to stimulate blood flow. By squeezing, veins and lymph vessels will be empty and filled. More blood supply is brought to the muscle being massaged. Petrissage has the effect of reducing pain, tension, and stiffness in the muscles. Friction is a small circular motion with deeper pressure using the fingers or thumbs to release parts of the muscle that are in spasm and to remove accumulated metabolic waste. This movement is useful for improving blood circulation and reducing tension (Ministry of Education and Culture, 2015).

Massage therapy for menstrual pain cases is only done on the abdomen because, based on *Traditional Chinese Medicine* (TCM), primary *dysmenorrhea* is included in abdominal pain during menstruation (Liu *et al.*, 2013), so massage is performed on the area complained of by the patient. Massage is done on the abdomen because it can facilitate the flow of Qi and blood and pass through the meridians by the spleen, liver, and kidney organs, as well as the special meridians, namely the Chong and Ren meridians, which are related to the uterus in menstruation (Maciocia, 2015).

In addition to massage therapy, menstrual pain management is done by giving sour turmeric herbs for 20 days. Sour turmeric has been used from generation to generation by our ancestors (Suciani *et al.*, 2014). Sour turmeric is a fresh herbal medicine that can refresh the body and can be used to help smooth and reduce menstrual pain (Army *et al.*, 2018). Empirically, turmeric is efficacious in facilitating the release of bile into the intestines (chologogue), which is used to digest fats derived from food, astringent, blood, and vital energy, eliminate blockages, fart (carminative), stimulate the uterus, which acts as a menstrual decay (emenagogue), facilitate labor, and act as an antibacterial, anti-inflammatory, and anticoagulant (Dalimartha, 2014). The properties of tamarind are laxative (laksan), fever relief (antipyretic), antiseptic, conditioning, abortivum, and increased appetite (Dalimartha, 2006). Processing sour turmeric with the

squish and mashing method makes all the ingredients come out and can be optimally utilized. Processing with the squish and mashing method produces fresh, sour turmeric. Keep the content of sour turmeric from being easily damaged, the feeling that results from the squish and mashing method can be warmed, not boiled (Mulyani *et al.*, 2017).

Turmeric rhizome has curcumin's primary content as an immunomodulator and anti-inflammatory (Purwitasari *et al.*, 2021; BPOM RI, 2012). The content of turmeric is an essential oil (3-5%): alpha and beta-turmerone (odor source), turmerone, alpha and beta-atlantone, curlone, zingiberene, and curcumenol. Curcuminoids (3-5%) include curcumin, dimethoxy curcumin, bide-methoxy curcumin, and starch (30–40%). Naturally, turmeric is believed to contain an active ingredient, curcumin, which can function as an analgesic, antipyretic, and anti-inflammatory (Nurbaiti, 2018; BPOM RI, 2011). Tamarind fruit contains anthocyanins, tannins, saponins, sesquiterpenes, alkaloids, and phlebotomists. Tamarind has active ingredients that are antioxidants, anti-inflammatory, antipyretic, and sedatives (Sharma and Dwivedi, 2017). Tamarind fruit contains anthocyanin, which functions as an anti-inflammatory and antipyretic. The content of tannins, saponins, sesquiterpenes, alkaloids, and phlebotomies in tamarind fruit can help reduce nervous system activity (Nurbaiti, 2018).

The active compounds of turmeric and tamarind, namely curcumin and anthocyanins, work together to inhibit the *cyclooxygenase* (COX) reaction so that it can inhibit or reduce inflammation and inhibit uterine contractions that cause menstrual pain (Widiatami *et al.*, 2018). The mechanism of inhibition of uterine contractions through curcumin is by decreasing the flux of calcium ions (Ca<sup>2+</sup>) into calcium canals in uterine epithelial cells. The content of tannins, saponins, sesquiterpenes, alkaloids, and phlebotomies in tamarind fruit will affect the autonomic nervous system so that it can affect the brain to reduce uterine contractions. And curcumin, as an analgesic agent, will inhibit the release of excessive prostaglandins (Nurbaiti, 2018).

Case studies of menstrual pain with patient's syndrome, namely the accumulation of cold and dampness, are caused by excess soil elements resulting in a pathological relationship, namely an oppressive relationship with the water element, which is the kidney organ and makes the water element deficient. Turmeric is used because it has warming properties that can repel cold and damp pathogens (Jaiswal *et al.*, 2016). Its bitter taste can eliminate excessive heat in the stomach (Abdurachman *et al.*, 2014). The sour taste of tamarind is a flavor of the wood element that can be used to limit excess soil elements because the elements of wood and soil have a physiological relationship, namely a limiting relationship (Abdurachman *et al.*, 2014).

## CONCLUSION

In a case study conducted on handling menstrual pain cases, it can be concluded that abdominal massage therapy and sour turmeric herbs reduce menstrual pain in cases of primary menstrual pain (*dysmenorrhea*).

## ACKNOWLEDGMENTS

The researcher would like to thank all parties contributing to this case study. The researcher stated there was no conflict of interest with the parties involved in this case study.

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