
**Effectiveness of turmeric and yoga complementary therapy for reducing
primary dysmenorrhea pain****Sri Sundari, Titis Dewi Cakrawati, Arif Kurniawan, Diva Amalia**

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Abstract: Dysmenorrhea is one of the complaints that adolescent girls often experience during menstruation and can have an impact on decreased activity, study concentration, and quality of life. Non-pharmacological management is an alternative that is widely used to reduce menstrual pain, one of which is through a combination of the consumption of turmeric herbs and yoga. The curcumin content in turmeric has anti-inflammatory and analgesic effects, while yoga can help relax muscles and improve blood circulation so that it can reduce the intensity of pain. This study aims to analyze the effectiveness of the combination of turmeric and yoga herbs on reducing the intensity of menstrual pain in female students of the Department of Sports and Health, Faculty of Vocational Studies, Yogyakarta State University. This study uses a quantitative method with a Quasi Experimental design through the One Group Pretest-Posttest approach. The research sample amounted to 20 respondents who were selected using purposive sampling techniques based on inclusion and exclusion criteria. Measurement of menstrual pain intensity was carried out using the Numeric Rating Scale (NRS) instrument. Data analysis was carried out univariate and bivariate using the Wilcoxon test with the help of the SPSS program. The results showed a decrease in the intensity of menstrual pain after the combination of turmeric and yoga medicine. The Asymp. Sig. (2-tailed) value before menstruation on the first day was 0.007 and the second day was 0.033, during menstruation the first day value was 0.000 and the second day was 0.001 ($p \leq 0.05$) The Asymp. Sig. (2-tailed) value obtained on the pre- and post-intervention measurements showed a result of ≤ 0.05 , which means that there was a significant difference in the reduction of menstrual pain in the respondents. Reduce the intensity of menstrual pain in female students. This combination of complementary therapies can be used as a non-pharmacological alternative in the treatment of dysmenorrhea in adolescent women.

Keywords: dysmenorrhea, turmeric herbs, menstrual pain, yoga.

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INTRODUCTION

Adolescence is a transition phase from childhood to adulthood which is characterized by physical, hormonal, psychological, and social changes. In adolescent girls, puberty is characterized by the occurrence of menstruation. Menstruation is a physiological process that occurs periodically every month as a sign of the maturation of the female reproductive organs. However, most adolescent girls experience menstrual disorders in the form of dysmenorrhea or menstrual pain. Dysmenorrhea is characterized by pain in the lower abdomen which can be accompanied by nausea, headaches, back pain, and disruption of daily activities (Osuga et al., 2020). This condition occurs due to increased production of prostaglandins which trigger excessive uterine contractions causing pain.

The prevalence of dysmenorrhea in adolescent girls is still quite high and is a frequent reproductive health problem. The World Health Organization reports that around 50–90% of women of reproductive age experience dysmenorrhea and 10–16% of them experience severe pain that interferes with daily activities (WHO, 2020). In Indonesia, the prevalence of dysmenorrhea reached 64.25% consisting of 54.89% primary dysmenorrhea and 9.36% secondary dysmenorrhea (Suban et al., 2017). Research by Fernández-Martínez et al. (2018) also shows that dysmenorrhea can be influenced by sleep quality, physical activity patterns, and adolescent lifestyle. Dysmenorrhea that is not treated immediately

can have an impact on decreased study concentration, limited social activities, increased absenteeism from school and lectures, and decreased the quality of life of adolescent girls (Sutrisnawati et al., 2024). The management of dysmenorrhea can be done pharmacologically or non-pharmacologically. Pharmacological treatment generally uses nonsteroidal analgesic and anti-inflammatory drugs (Non-Steroidal Anti-Inflammatory Drugs / NSAIDs). However, long-term use of drugs can cause side effects such as gastric disorders and drug dependence (Zuraida & Keta, 2020). Therefore, nonpharmacological therapy is a safer and easier alternative for adolescent girls. Some nonpharmacological methods that can be done include regular exercise, relaxation, consumption of herbal drinks, and yoga (Susanti et al., 2022).

One of the herbal therapies that is widely used to reduce menstrual pain is Turmeric. Turmeric contains curcumin compounds that have anti-inflammatory and analgesic effects so that they are able to inhibit the production of prostaglandins and reduce uterine contractions (Ridwan et al., 2024). Research by Baiti et al. (2021) showed that the administration of turmeric acid was effective in reducing the intensity of menstrual pain in adolescent girls with a p-value of 0.000. In addition to herbal therapy, Yoga is also known to be effective in reducing menstrual pain. Yoga can help relax muscles, improve blood circulation, as well as stimulate the release of endorphin hormones that function as natural analgesics for the body (Pratnawati et al., 2021).

Research by Julianti et al. (2023) shows that yoga influences reducing the intensity of dysmenorrhea in adolescents with a p-value of 0.000. Although research on turmeric and yoga has been conducted separately, research combining the two interventions is still limited, especially in students of the Department of Sports and Health, Faculty of Vocational Studies, State University of Yogyakarta. The novelty of this research lies in the combination of turmeric herbs and yoga as a complementary therapy in reducing menstrual pain in female students. The combination of the two interventions is expected to be able to provide a more optimal effect in reducing menstrual pain compared to the use of a single therapy. Based on this description, this study aims to analyze the effectiveness of the combination of turmeric and yoga herbs on reducing menstrual pain in female students of the Department of Sports and Health, Faculty of Vocational Studies, Yogyakarta State University.

METHODS

This study employed a quasi-experimental method with a One Group Pretest–Posttest design. The study population consisted of 286 female students, with a sample of 20 respondents selected through purposive sampling. The inclusion criteria were female students with regular menstrual cycles, mild to moderate menstrual pain, and willingness to consume turmeric herbal medicine. The exclusion criteria included the use of analgesic medications, unwillingness to consume turmeric herbal medicine, or the presence of chronic diseases.

The intervention consisted of consuming a turmeric herbal drink prepared from 30 g of turmeric powder mixed with 200 mL of warm water and sweetened with palm sugar, brown sugar, or honey as desired. Participants consumed the drink once daily for four consecutive days, starting two days before menstruation until the second day of menstruation. In addition, participants performed yoga exercises for 30 minutes once daily during the same period. Menstrual pain intensity was measured before and after the intervention using the Numeric Rating Scale (NRS). Data were analyzed using univariate and bivariate methods with SPSS software. The Wilcoxon Signed-Rank Test was applied at a significance level of $\alpha \leq 0.05$ to evaluate the effectiveness of the intervention in reducing menstrual pain intensity.

RESULT AND DISCUSSION

Results Bivariate analysis to determine the difference in the level of menstrual pain in combination with yoga and turmeric herbs is presented in the following table.

Table 1. Differences in Menstrual Pain Levels Before and After Intervention in the premenstrual phase

Variabel	Z	Asymp. Sig. (2-tailed)
Posttest Day 1 – Pretest Day 1	-2,714	0,007
Posttest Day 2 – Pretest Day 2	-2,131	0,033

Based on Table 1, shows that there is a difference in menstrual pain levels before and after the intervention of turmeric herbal medicine and yoga during the premenstrual phase over two days of observation. On the first day, the Z value was -2.714 ($p = 0.007$), and on the second day, the Z value was -2.131 ($p = 0.033$), both indicating $p < 0.05$. This means that the intervention had a significant effect in reducing menstrual pain during the premenstrual phase.

Table 2. Differences in Menstrual Pain Levels Before and After Menstrual Phase Intervention

Variabel	Z	Asymp. Sig. (2-tailed)
Posttest Day 1 – Pretest Day 1	-3,688	0,000
Posttest Day 2 – Pretest Day 2	-3,384	0,001

Based on Table 2, Shows that there is a difference in menstrual pain levels before and after the intervention of turmeric herbal medicine and yoga during the menstrual phase over two days of observation. the first day of menstruation shows that a Z value of -3.688 was obtained with an *Asymp. Sig. (2-tailed)* value of 0.000. On the second day, a Z value of -3.384 was obtained with an *Asymp. Sig. (2-tailed)* value of 0.001. The significance value on both days showed $p \leq 0.05$, so H_a was accepted. The results showed that there was a significant difference in the level of menstrual pain before and after the administration of turmeric herbal medicine and yoga interventions during menstruation The results showed that complementary therapy in combination with turmeric herbs and yoga was effective in reducing the intensity of menstrual pain in adolescent women.

The results showed that there was a significant difference in the level of menstrual pain before and after the administration of the combination of turmeric herbs and yoga interventions in the premenstrual and menstruation phases. Based on the results of the Wilcoxon test in the premenstrual phase, the first day obtained a Z value of -2.714 with an *Asymp. Sig. (2-tailed)* value of 0.007 and the second day obtained a Z value of -2.131 with an *Asymp. Sig. (2-tailed)* value of 0.033. The significance value on both days showed $p \leq 0.05$, so H_a was accepted. During menstruation, the first day obtained a Z-value of -3.688 with an *Asymp. Sig. (2-tailed)* value of 0.000 and the second day obtained a Z-value of -3.384 with an *Asymp. Sig. (2-tailed)* value of 0.001. The significance value shows $p \leq 0.05$ so that H_a is accepted. Thus, the results of the study prove that the combination of turmeric herbs and yoga is effective in reducing the intensity of menstrual pain in adolescent women.

Menstrual pain or dysmenorrhea occurs due to increased production of Prostaglandins which cause excessive uterine contraction causing pain in the lower abdomen (Osuga et al., 2020). According to Andriana (2018), excessive uterine contractions can inhibit the supply of blood and oxygen to the uterine tissues, causing pain. High levels of prostaglandins are also related to the appearance of other symptoms such as nausea, headaches, back pain, and disruption of daily activities. This condition causes dysmenorrhea to become one of the reproductive health problems that adolescent girls often experience and has an impact on a decrease in quality of life.

The decrease in the intensity of menstrual pain in this study was influenced by the curcumin content contained in Turmeric. According to Ridwan et al. (2024), turmeric contains curcuminoid active compounds that have anti-inflammatory, analgesic, and antioxidant effects. Curcumin compounds work by inhibiting the activity of the enzyme cyclooxygenase (COX) so that prostaglandin production can be suppressed and uterine contractions are reduced (Susanti et al., 2022). Research by Sina and Yusuf (2012) also explains that curcumin is able to inhibit inflammatory reactions in uterine epithelial tissue so that menstrual pain can decrease. In addition, turmeric also contains essential oils that can help improve blood circulation and reduce muscle spasms in the uterus.

The results of this study are in line with the research of Baiti et al. (2021) which showed that the administration of sour turmeric influenced reducing menstrual pain in adolescent girls with a p-value of 0.000. Another study by Sutrisnawati et al. (2024) also showed that the consumption of turmeric herbal drinks is effective in reducing the intensity of dysmenorrhea because the content of curcumin acts as a natural anti-inflammatory. Research by Yulina et al. (2020) explains that herbal therapy has a safer effect than the use of long-term analgesics that are at risk of causing gastric disorders and drug dependence. In addition to the consumption of turmeric herbs, Yoga intervention also plays an important role in reducing menstrual pain.

Yoga is a physical exercise that combines breathing techniques, meditation, stretching, and relaxation of the body so that it can improve physical and psychological balance (Pratnawati et al., 2021). According to Sindu and Pujiastuti (2014), yoga can stimulate the release of endorphins and enkephalin hormones which function as natural analgesics for the body so as to help reduce the perception of pain. In addition, yoga also helps improve blood circulation to the reproductive organs and reduces abdominal muscle tension during menstruation.

This study is in line with the research of Julianti et al. (2023) which showed that yoga had a significant effect on reducing the intensity of dysmenorrhea in adolescents with a p-value of 0.000. Research by Novryanthi and Nurhayati (2020) also explains that relaxation techniques in yoga can help reduce stress, anxiety, and emotional tension which can aggravate the perception of menstrual pain. According to Manurung (2015), yoga can increase the activity of the parasympathetic nervous system which causes vasodilation of uterine blood vessels so that blood flow becomes smoother and menstrual pain is reduced.

The combination of turmeric and yoga in this study had a more optimal effect because both interventions worked through different but mutually supportive mechanisms. Turmeric herbs work physiologically through anti-inflammatory and analgesic effects to reduce uterine contractions, while yoga works through relaxation of the body and an increase in endorphin hormones that can decrease the perception of pain. The combination of these two therapies helps reduce muscle tension, improve blood circulation, and increase the physical and psychological relaxation of respondents. This is in accordance with the theory of complementary therapy which states that a combination of physical and herbal interventions can provide synergistic effects in reducing pain and increasing body comfort (Gumangsari, 2014).

The results of the study show that nonpharmacological therapy can be a safe and effective alternative in treating dysmenorrhea in adolescent girls. According to the World Health Organization, a non-pharmacological approach is recommended in the treatment of menstrual pain because it has minimal side effects and can improve the quality of life of women of reproductive age. In addition to being easy to do, the combination of turmeric herbs and yoga is also relatively economical and can be applied independently by adolescent women in their daily lives. Therefore, this combination of complementary therapies can be used as a non-pharmacological alternative in the treatment of dysmenorrhea to help improve the reproductive health of adolescent girls.

CONCLUSION

The results of the study showed that the combination of turmeric herbs and yoga was effective in reducing the intensity of menstrual pain in female students of the Department of Sports and Health, Faculty of Vocational Studies, Yogyakarta State University. This is evidenced by the results of the Wilcoxon test with a significance value of $p \leq 0.05$ both in the premenstrual and menstruation phases, so that there is a significant difference between the level of pain before and after the intervention. The findings of this study show that a combination of complementary therapy in the form of turmeric herbs and yoga can be used as a non-pharmacological alternative that is safe, easy to apply, and useful in the treatment of dysmenorrhea in adolescent women.

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