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Efficacy of Yoga Exercises in pain relief in Primary Dysmenorrhea and Premenstrual Syndrome: a Literature Review

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ABSTRACT
Objective: Women undergo various physiological and psychological changes during the reproductive stage*, particularly during the menstrual cycle. Premenstrual symptoms, or dysmenorrhea, are the terms used to describe this. Menstrual pain is another term for dysmenorrhea, and primary dysmenorrhea often starts six months following menarche. Premenstrual symptoms are a complicated collection of symptoms that hurt a student's quality of life in the long run and their ability to succeed in school, participate in social activities, and maintain family relationships. Problems with both physical and mental health can benefit from yoga.* ***Method:*** *This study aims to assess the effectiveness of yoga activities in relieving pain in primary dysmenorrhea and premenstrual syndrome. In this investigation, a review of the literature was used. Six journal databases were searched for articles. Seven articles satisfied the requirements for inclusion.* ***Result:*** *The review's findings indicate that yoga practice is a viable substitute and is suggested as a simple, accessible, and non-invasive strategy for analgesia in primary dysmenorrhea and premenstrual syndrome.* ***Novelty:*** *This study shows the effectiveness of yoga exercises in reducing pain in primary dysmenorrhea and premenstrual syndrome for adolescents, especially women.*

INTRODUCTION

It has been discovered that adolescence is special and has a significant impact on the body's physiological and psychological systems. Menstrual periods typically start between the ages of 8 and 14, or roughly two years after the commencement of puberty, and are regarded to be the primary cause of these changes in a woman's life (Somwanshi et al., 2017; Kamalifard et al., 2017; Lata & Lohan, 2018). It is typical for women to menstruate between the ages of 12 and 13. Women undergo various physiological and psychological changes during the reproductive stage, particularly during the menstrual cycle. Premenstrual symptoms, or dysmenorrhea, are the terms used to describe this. Premenstrual syndrome is the name given to this illness (PMS). These alterations last for two to four days following the start of her menstrual cycle, starting six to twelve days prior (Archana, 2018; Armour et al., 2019; Ferreira & Kulkarni, 2019).

Periodic discomfort that is directly associated with menstruation is known as dysmenorrhea or menstrual pain. The pain goes away with menstruation and starts right before or at the beginning of the menstrual cycle. Thighs, the lower back, or the pelvis may all hurt (Simsek Kucukkelepce et al., 2021; Rakhshaee, 2011). Within six months of menarche and following the establishment of the ovulatory cycle, primary dysmenorrhea typically manifests (Pathak & Shukla, 2023). Primary dysmenorrhea is pain and discomfort throughout the monthly cycle brought on by the uterus's endometrium producing an excessive amount of prostaglandins during the menstrual cycle

(Elbandrawy & Elhakk, 2021; Fisher et al., n.d.). This causes elevated blood pressure in the uterine fibroids and blood vessels in the lower abdomen. It results in contractions, which lower the uterus's oxygen supply (Nurvitasari et al., 2023; Maya et al., 2022).

More than 50% of women experience dysmenorrhea in some parts of the world, where its occurrence is still relatively high. The World Health Organization (WHO) stated in 2013 that 90% of women, or 1,769,425 individuals, had dysmenorrhea, with 10-15% reporting severe discomfort. 107,673 (64.52%) women in Indonesia have primary dysmenorrhea, which affects 59,671 (54.89%), and secondary dysmenorrhea, which affects 9,496 (9.36%) (Padmavathi, 2014; Wadde, 2023; Kizilirmak et al., 2019).

Premenstrual symptoms are a complicated collection of symptoms that hurt a student's quality of life in the long run as well as their ability to succeed in school, participate in social activities, and maintain family relationships (Widiastini et al., 2023; Thejaswini et al., 2014; N, 2022). It is estimated that between 50 and 90 percent of women who are of childbearing age suffer from a range of premenstrual symptoms. However, the intensity varies (Vaghela et al., 2019; Raipure & Patil, 2023). Premenstrual syndrome can have a detrimental effect on a woman's quality of life and lead to both physical and psychological issues. Due to PMS, a lot of women encounter social and professional dysfunction as well as psychological and physical issues every month (Padmavathi, 2015; Azmoudeh et al., 2019; Aggarwal et al., 2020). Three to five percent of women miss work or school each month as a result of severe PMS. The term PMS is used to describe a group of physiological, cognitive, emotional, and behavioral symptoms that occur during the luteal phase of the menstrual cycle and resolve rapidly at or within a few days of the beginning of the menstrual cycle (Jadhao, 2019; Kustriyanti & Boediarsih, 2017; El-Kholy & Shalaby, 2023).

However, because of the possibility of diminished efficacy and increased reliance, analgesics are not a long-term treatment (Kustriyanti & Boediarsih, 2017). Thus, consideration should be given to aromatherapy, acupressure, acupuncture, massage, transcutaneous electrical nerve stimulation, behavioral therapies, aromatherapy, yoga, herbal therapy, and nutritional therapy as alternatives to these conventional treatments (Tsai, 2016; Kamalifard et al., 2017). It's getting higher. Previous studies indicated that yoga may have a good effect on physical and mental health problems by downregulating the hypothalamic-pituitary-adrenal axis and the sympathetic nervous system, leading to primary dysmenorrhea (Saglam & Orsal, 2020). It has been proposed that treating premenstrual syndrome with it could potentially be beneficial.

"Yuj" (sanskrit for "to unite") is the root of the word yoga, which describes the union of attention to the body, mind, emotions, reasoning, and action (Yang & Kim, 2016). Yoga is a physical activity that promotes health, relaxation, and good consciousness. It also includes breathing exercises (pranayama), mental exercises (pratyahara), and mental exercises (asanas) (Yashika & Vasanthi, 2019). Achieving physical, mental, and spiritual peace through the union of man and the Creator is what yoga represents. The necessity for the body and mind to work together is what gave rise to yoga (Fernández-Martínez et al., 2019). You will have beneficial advantages if you frequently practice yoga poses.

Yoga is an intentional physical practice that tones the body, heightens awareness, and fortifies emotions in the process (Tiwari et al., 2022; Kaur & Saha, 2018).

Typical yoga activities include breathing, relaxation, meditation, and positions. Her three yoga poses—Surya Namaskara, Yoga Nidra, and Trikona—are part of her modified yoga program for patients with primary dysmenorrhea. Within 12 weeks, a regular at-home yoga program lasting 30 to 45 minutes per day, at least twice a week, may prove to be a valuable adjuvant therapy for primary dysmenorrhea (Nurdiana et al., 2023; Ramaiah & Albokhary, 2021; Sharma & Gurprasad, 2019).

Yoga is now recommended as a safe, cost-effective, non-invasive method and easily accessible pain relief intervention with minimal or no side effects. Due to the above issues, the authors selected the title "Efficacy of Yoga Exercises in Pain Relief in Primary Dysmenorrhea and premenstrual syndrome: Literature Review" as the topic of this scientific paper based on the literature review. The author would like readers to know whether yoga exercises can relieve menstrual pain. The draft of this scientific study is based on a literature review. A literature review analyzes, critically appraises, and synthesizes knowledge related to a research problem on a particular topic.

RESEARCH METHOD

Relevant research on suitable yoga poses for treating women's premenstrual syndrome or dysmenorrhea-related discomfort was compiled by a survey of the literature. The PRISMA checklist, the Center for Review and Dissemination criteria, and the Joanna Briggs Institute criteria were utilized to evaluate the quality of the studies. The inclusion and exclusion criteria will be established using the Population, Intervention, Comparison, Outcome, and Study Design (PICOS) framework (Dwi Hareni et al., 2023). Table 1 displays the inclusion and exclusion criteria applied to choose the articles that the search technique turned up.

Table 1. Inclusion and exclusion criteria with PICOS

Criteria	Inclusion	Exclusion
Population	Sample with dysmenorrhea or premenstrual syndrome	Sample non-dysmenorrhea or premenstrual syndrome problems
Intervention	Yoga exercise	Not relevant to Yoga exercise
Comparisons	No comparisons	No comparisons
Outcome	Yoga exercises that influence pain in dysmenorrhea or premenstrual syndrome	It is not relevant to yoga exercise to overcome pain in dysmenorrhea or premenstrual syndrome
Study design	All methods of research involving female subjects using yoga exercise	Systematic or literature reviews
Publication years	2011-2021	Pre-2011
Language	English/ Indonesian	Non-English/ Indonesian Language

This study uses a literature review to collect and summarize previous research data for critical analysis. This method focuses on the effectiveness of yoga practices by distilling the research results to date. Research data is processed through processing, organization, analysis, and dissemination. The articles are from several databases such as JSTOR, PubMed, Taylor, Sage, Willey Online, and Google Scholar. Search engines use his MeSH terminology ("Yoga exercise"[Mesh] AND "Pain"[Mesh]) AND "Premenstrual Syndrom"[Mesh]) OR "Primary Dysmenorrhea"[Mesh].

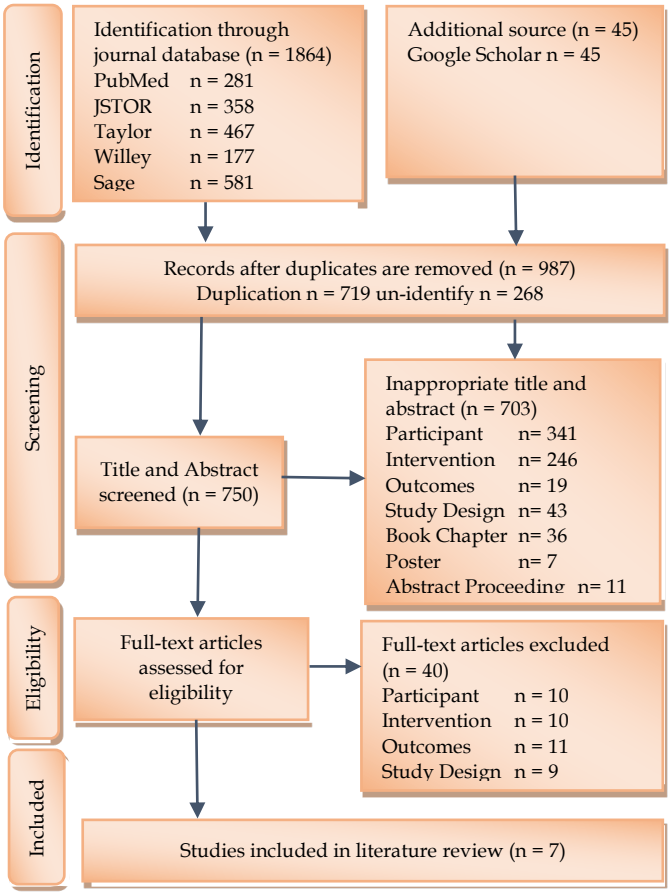

Figure 1. Identification procedures by Prisma analysis

We set inclusion criteria to include articles published in full access in English or Indonesian between 2011 and 2021. The authors also used exclusion criteria: book chapters, posters, or process summaries. Additionally, the authors performed an analysis process for each of these techniques. The identification procedure using prism analysis is shown in Figure 1.

RESULTS AND DISCUSSION

Results

Analyzing the potential of yoga poses for analgesia in primary dysmenorrhea and premenstrual syndrome was the major goal of the literature review. There is proof that yoga's positive effects on both physical and mental health result from its negative regulation of the sympathetic nervous system (SNS) and the hypothalamic-pituitary-adrenal axis (M & Rajan, 2022; Malhotra et al., 2020). The vagus nerve, which controls

many bodily systems, releases hormones (adrenaline, cortisol, glucose, plasma renin, adrenaline, and noradrenaline) into the bloodstream that are negatively regulated by yoga poses. By promoting immune globulin adaptability, yoga positively regulates the immune system's response to stress (Nurvitasari et al., 2023; Girman et al., 2003).

Table 2. Characteristic of the Study

Author (year)	Method	Findings
Yang and Kim (2016)	The purpose of this study is to look into how a yoga program affects undergraduate students with primary dysmenorrhea menstrual pain and discomfort. Design: A randomized controlled experiment with single blind. Sample: 20 of the 40 nursing students will be placed in the practice or control group, while the other 20 will be chosen at random. Interventions: For 12 weeks, participants took part in a 60-minute yoga class once a week. The curriculum included meditation and relaxation techniques along with physical activities. Instrument: The Visual Analogue Scale for Pain and the Menstrual Pain Questionnaire were used to measure menstrual pain and pain, respectively.	The experimental group saw a substantial decrease in menstrual pain intensity (group difference, -0.94; 95% confidence interval [CI], -1.47 to -0.42; p = 0.001) and menstrual discomfort (group difference, -1.13; 95% CI, -1.43 to -0.82; p < 0.0001) when compared to the control group. These findings imply that yoga interventions can lessen both the pain associated with menstruation and primary dysmenorrhea in female students.
Vaghela *et.al* (2019)	Goal: To contrast how yoga and aerobic activity affect PMS. Design: This study uses a parallel-group randomized design. Sample: A total of 72 He PMS participants (mean age of 28 years) who were referred for physical therapy treatments were included. He was then split into two groups (Groups A and B) using a straightforward computer-assisted randomization technique. Intervention: for a month, patients in group B underwent 40 minutes of yoga instruction three times a week, whereas patients in group A engaged in aerobic activity. Instrumentation: after his fifteenth day and before the end of his first month of treatment, the patient's pain intensity (visual analog scale) and PMS scale were measured.	The end of the treatment program demonstrated a substantial (P < 0.05) decrease in both groups' pain intensity (VAS) and PMS, and both aerobic exercise and yoga movements effectively reduced PMS symptoms. It has been proven to assist in relieve. It has been determined that yoga poses and aerobic activity are both beneficial in managing his PMS. However, when it comes to easing PMS symptoms, yoga works better than cardiovascular activity.
Kucukkelepce *et.al* (2021)	The goal is to ascertain how premenstrual syndrome (PMS) symptoms and quality of life are affected by acupressure and yoga. Design: A prospective pretest-posttest intervention design was employed in this randomized controlled study.	Students in the yoga group scored higher on the World Health Organization Quality of Life Questionnaire's Physical Health, Mental Health, and Environment

Author (year)	Method	Findings
	A total of 155 students—50 in the yoga group, 51 in the acupressure group, and 54 in the control group—complained of PMS. Intervention: For 12 weeks, students in the intervention group underwent acupressure and yoga. Tool: The goal of Gencdogan's Premenstrual Syndrome Scale is to gauge how severe premenstrual symptoms are. In 1980, the World Health Organization (WHO) created the WHOQOL-100 scale and defined quality of life. Cross-cultural comparisons were made possible by this scale, which included inputs from fifteen different locations worldwide.	subscales and lower on the Premenstrual Syndrome Scale in comparison to the other groups. As it happens, the group ($p < 0.05$). Yoga is a cheap, easy, safe, and efficient method that you may do on your own at any time, anyplace, to lessen the intensity of premenstrual symptoms. Consequently, yoga is suggested for women to help them manage PMS. A more successful non-pharmacological strategy for treating premenstrual symptoms is yoga.
Kamalifard *et.al* (2017)	The purpose of the study is to assess how yoga activity affects PMS. A controlled, randomized clinical trial was the design. Sample: Conveniently chosen from among women who were randomly referred to a certain private obstetrics and gynecological clinic in Tabriz, Iran, are eligible ladies. The study's sixty-two volunteers were subsequently chosen. Two groups were randomly selected from among the subjects. block 4 and block 6 patients in the control group, along with 31 yoga subjects. Intervention: Over ten weeks, the yoga group met for three 60-minute classes each to practice yoga. The control group's participants did not practice yoga. Tools: Participants filled out the Premenstrual Symptom Screening Tool (PSST) questionnaire to gauge how yoga exercise affected their PMS patients' emotional, behavioral, and physical symptoms as well as their overall quality of life both before and after the intervention.	For emotional, physical, and behavioral symptoms as well as quality of life, the mean ± standard deviation (SD) effects of yoga practice were 26.28 ± 16.54, 32.69 ± 20.81, 10.90 ± 14.10, 22.8 ± 14.56, and 54.91 ± 21.31 in the control group. 72.01 ± 22.24, 44.05 ± 22.32, and 54.00 ± 20.33, respectively. The findings show that yoga greatly reduces PMS symptoms and can be recommended as a treatment for PMS.

Author (year)	Method	Findings
Rakhshaee (2011)	Goal: Examine yoga's therapeutic benefits for primary dysmenorrhea. Style: Sample: Ninety-two female students, ages eighteen to twenty-two, with primary dysmenorrhea were randomly assigned to fifty experimental students and forty-two control students. Intervention: Three menstrual cycles were assessed for each group. In the first cycle, there were no methods offered. All that was required of the participants was answering a questionnaire on menstrual features during the menstrual cycle. Subsequently, individuals in the experimental group were instructed to complete a questionnaire about menstrual features during menstruation and to practice yoga during the luteal phase. Other than answering a questionnaire about menstrual features during menstruation, the control group received no intervention. Instrument: The Visual Analog Scale for Pain was used to measure the amount of pain and determine how many hours it lasted.	Pain intensity and duration in the yoga group were significantly different in the posttest from the pretest ($P < 0.05$). The findings demonstrated that the experimental group's pain intensity and duration differed significantly from the control group's ($P < 0.05$).
Armour *et.al* (2019)	Goal: To evaluate how safe and effective exercise is for women who have primary dysmenorrhea. Design: RCTs, or randomized controlled trials Sample: 12 studies in all, with 854 women taking part in the review (10 of his investigations and 754 of the meta-analysis's participants being women). Interventions: One trial compared exercise with her NSAIDs, and nine of the ten studies compared no therapy to exercise. Studies contrasting oral contraceptives or exercise with attention management are nonexistent. Tool: Common menstruation symptoms, such as fatigue, nausea, and back pain, are quantified by alterations in the total dysmenorrhea symptoms. either self-reported or noticed by the researcher with the use of instruments like the Moos Menstrual Distress Questionnaire (MMDQ). Using analgesics in an emergency. expressed as the percentage of women in need of analgesics in an emergency. Limitations in activities of daily thriving. The percentage of women who reported having activity limits is used to measure it.	Low-intensity exercises like yoga, stretching, and core strengthening were used in the studies, as well as high-intensity exercises like Zumba or aerobic activity. There was not a single strength training study included. When it comes to lowering the severity of menstrual discomfort, exercise may be more effective than no treatment at all. (n = 632; I2 = 91%; low quality of evidence; standardized mean difference (SMD) -1.86, 95% confidence interval (CI) -2.06 to - 1.66, 9 randomized controlled trials (RCTs))

Author (year)	Method	Findings
	Absence from school or job. It is calculated as the percentage of women who said they missed work or school. To be more specific, it can also be calculated as the number of hours and days missed. Validated scales, such as the 36-item Short-Form Health Survey (SF-36) and the EuroQoL 5D (EQ-5D), are used to measure quality of life.	
Chien *et.al* (2013)	The aim of this study was to investigate how yoga affected the levels of homocysteine and nitric oxide (NO) in the serum of a group of women who had primary dysmenorrhea and a control group of healthy women. Design: A controlled prospective research. Sample: In a community-based trial, 35 women with primary dysmenorrhea and 35 healthy controls were included. Intervention: For eight weeks, every participant got a 30-minute yoga session twice a week. On the third day of each woman's menstrual cycle, blood samples were obtained. After the yoga intervention ended, measurements of homocysteine and NO concentrations were made using MDQ and blood samples at baseline and during the first three days of the following menstrual cycle. Menstrual symptoms were measured using the Menstrual Symptom Questionnaire (MDQ), a brief questionnaire.	After an 8-week intervention period, yoga was found to be associated with a reduction in the severity of dysmenorrhea and may be useful in lowering blood homocysteine levels. These findings imply that by improving endothelium function, yoga may benefit women therapeutically.

Discussion

The ability of yoga to reduce menstruation discomfort is a common thread among all seven articles. You can lessen and manage the intensity of menstrual pain with this yoga pose. The reviewed paper's findings come from a study conducted in 2016 by Nam Young Yang and Sang Dol Kim. The study was titled "Effect of a yoga program on menstrual pain and dysmenorrhea in students with primary dysmenorrhea: A Single-Blind," and it was found that the program had a significant impact on pain relief outcomes both before and after the intervention, in line with randomized controlled trials. Yoga can be utilized as a component of an exercise program to relieve stress, develop flexibility, and strengthen muscles. It is comparable to exercise in that it can have positive psychological and physical consequences. The current study, like other research, lends credence to the theory that yoga practice can help nursing students with primary dysmenorrhea with their psychological and physical issues. The seven articles' shared use of a control group is another similarity (Yang & Kim, 2016; Sara Azima, 2015).

The evaluated articles varied, especially regarding the respondents' ages: some of the articles discussed young adult women, while others focused on teenagers. In the second article, we compared the two by conducting a pretest (first observation) before yoga

treatment and a posttest (final observation) following treatment after engaging in aerobic exercise. A study was carried out to verify this. Both the pre-and post-tests Using independent t-tests, the results for the two groups demonstrated that her PMSS dramatically dropped in group B (yoga) instead of group A (aerobic activity). Nevertheless, there was no discernible difference between the two groups' pain intensity reduction (VAS) after the treatment program ($P < 0.05$) (Vaghela et al., 2019; Dwi Hareni et al., 2023). In comparison to individuals who engaged in aerobic activity, those who practiced yoga saw a higher decrease in PMSS. While physical activity and yoga pose share many similarities, they also differ greatly. Their focus on posture maintenance, breathing control, and rest sets yoga apart from regular exercise. The literature is divided on the usefulness of physical activity programs for treating primary dysmenorrhea. The beneficial impact of physical activity on lowering stress levels, which is linked to period pain and other menstrual diseases, is one explanation for the mechanism (Vaghela et al., 2019; Aarathi U C., 2020).

According to the third article, using acupressure and yoga to treat premenstrual symptoms decreases symptoms and enhances quality of life. Additionally, compared to acupressure, yoga helps reduce the severity of premenstrual symptoms and enhances quality of life. Another non-pharmacological strategy for treating premenstrual symptoms is yoga. This study demonstrated that practicing yoga for 12 weeks to treat premenstrual symptoms significantly reduced the severity of PMS symptoms and increased quality of life ($p < 0.05$) (Simsek Kucukkelepce et al., 2021). Yoga is a cheap, easy, safe, and efficient method that you can use on your own at any time, any place, to lessen the intensity of premenstrual symptoms. Apart from acupressure, yoga is also utilized to enhance quality of life by lowering blood pressure and depression associated with PMS (Makuch et al., 2016). Furthermore, a study comparing the effects of yoga and breathing exercises on baseline parameters and premenstrual symptoms discovered that, although both practices had comparable effects on baseline parameters, yoga was more successful in lowering the intensity of premenstrual symptoms (UÇAK & SÜZER ÖZKAN, 2022; Sahu & Barnwal, 2022).

The fourth piece discusses how practicing yoga helps a lady experiencing PMS throughout a regular menstrual cycle to feel less symptomatic. By easing PMS symptoms, calming down the body, and minimizing pain, this greatly enhances the quality of life for women who suffer from PMS. As a result, medication therapy is only necessary in extreme circumstances (Kamalifard et al., 2017). Research has demonstrated that yoga helps calm and balance the nervous system while reducing the number of PMS symptoms. According to studies, hatha yoga improves both physical and mental relaxation, easing stress and tense muscles. This lowers anxiety and promotes deeper, more restful sleep. This study examined important symptoms and showed that practicing hatha yoga lowers stress levels and sympathetic activity in women suffering from PMS, leading to an increase in relaxation. Participants in the current study reported that practicing yoga increased their quality of life (PI) (Rakhshaee, 2011; Makuch et al., 2016; Aarathi U C., 2020).

The sixth article indicates that yoga lowers the intensity and duration of primary dysmenorrhea. The Friedman test and the repeated measures ANOVA test revealed

significant differences between the two posttests in pain intensity and duration compared to the pretest (P = 0.000) (Armour et al., 2019). This indicates that the frequency and duration of dysmenorrhea decreased following yoga. These findings imply that yoga positions are a secure and easy way to treat primary dysmenorrhea. In addition, compared to the first month, pain severity and duration decreased much more following the second month of yoga practice. As with the sixth article, exercise, whether high-intensity (Zumba, aerobics) or low-intensity (stretching, core strengthening, yoga), is more effective at reducing menstruation pain than no activity at all (Armour et al., 2019; Indu et al., 2020; Guruprasad et al., 2019). It's been characterized as It is believed that yoga reduces pain by assisting the brain's pain centers in controlling the spinal cord's gating mechanisms and the body's natural painkiller release (Triananinsi et al., 2021; Riskiyani et al., 2022). Breathing exercises used in yoga also lessen discomfort. The act of exhaling promotes relaxation and eases stress. Breathing more slowly and peacefully while you are conscious of it can aid in pain relief and relaxation (Cahyati et al., 2022; Elverişli et al., 2023).

The seventh study discovered a correlation between a yoga intervention and decreased dysmenorrhea severity. Following the yoga intervention, the MDQ total score dropped dramatically from a baseline mean score of 34.20 to 28.73 ($p < 0.001$). Following eight weeks of yoga practice, both groups' serum homocysteine levels significantly decreased. We did not find any variations in NO levels between patients with dysmenorrhea and healthy controls, in contrast to prior investigations (Chien et al., 2013). These findings imply that oxidative markers and endothelial function interact intricately and that endothelium-dependent factors may mediate yoga's therapeutic benefits (KC & Bhandary, 2022; Hemalatha et al., 2023). Following an 8-week intervention period, yoga might help lower homocysteine levels in the blood (Ibrahim et al., 2023). These findings imply that yoga may benefit women therapeutically by repairing endothelial dysfunction.

CONCLUSION

Fundamental Finding: A review of seven articles' worth of literature led to the conclusion that yoga activities can help women with premenstrual symptoms and dysmenorrhagic pain. The three analyzed publications showed variations in the average amount of pain alleviation. **Implication:** Yoga poses can lessen symptoms and enhance quality of life when used to treat dysmenorrhea and premenstrual syndrome. Yoga is a cheap, easy, safe, and efficient method that you may use on your own at any time, any place, to lessen the discomfort of dysmenorrhea and the intensity of premenstrual symptoms. Thus, teaching yoga to women is advised as a way to help them manage the discomfort associated with PMS and dysmenorrhea. suggests that medical practitioners teach yoga poses as an adjunctive treatment to help adolescents suffering from dysmenorrhea feel better. **Limitation:** The review is only research published in the last 10 years. The limitation of the method used is that there is no quality analysis and risk assessment of bias. **Future Research:** Future writers should be able to create new subjects and conduct more bibliographic searches, it is hoped

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REFERENCES

Aarathi U C., S. K. (2020). Impact of Physical Activity and Physical Symptoms: Indication of Premenstrual Dysphoric Disorder. International Research Journal of Education and Technology, 1(2), 40–51.

Aggarwal, A., Rao, T., Palekar, T., Paranjape, P., & Singh, G. (2020). Effect of Yogasanas and Pranayama on Pain , Severity and Quality of Life in Primary Dysmennorhea. Int J Med. Public Health., 10(1), 38–42.

Archana, S. D. (2018). EFFECT OF SURYA NAMASKAR IN PRIMARY DYSMENORROEA (Issue February).

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. Cochrane Database of Systematic Reviews, 2019(9). https://doi.org/10.1002/14651858.CD004142.pub4.

Azmoudeh, B. E., Habibian, M., & Askari, B. (2019). The Effectiveness of the Combination of Cinnamon and Ginger with Exercise Training in the Treatment of Dysmenorrhea and Premenstrual Syndrome. Iran Journal of Nursing (IJN), 32(121), 68–81. https://doi.org/10.29252/ijn.32.121.68

Cahyati, N., Nurhayati, F., & Sumarlina, N. (2022). The Effect of Yoga on the Intensity of Primary Dysmenorrhea in Adolescent Girls at Insan Permai Youth Posyandu Cikancung Village Bandung. Science Midwifery, 10(5), 4225–4231. https://doi.org/10.35335/midwifery.v10i5.1035

Chien, L. W., Chang, H. C., & Liu, C. F. (2013). Effect of yoga on serum homocysteine and nitric oxide levels in adolescent women with and without dysmenorrhea. Journal of Alternative and Complementary Medicine, 19(1), 20–23. https://doi.org/10.1089/acm.2011.0113

Dwi Hareni, N., Astuti, A., & Abidin, Z. (2023). Yoga Practice on Reducing Menstrual Pain Intensity (Dysmenorrhea) in Adolescent Girls: Literature Review. Health and Technology Journal (HTechJ), 1(2), 196–204. https://doi.org/10.53713/htechj.v1i2.35

El-Kholy, E. A., & Shalaby, A. E. (2023). Tanta Scientific Nursing Journal (Print ISSN 2314 5595) (Online ISSN 2735 5519). Tanta Scientific Nursing Journal, 28(1), 12–30.

Elbandrawy, A. M., & Elhakk, S. M. (2021). Comparison between the effects of aerobic and isometric exercises on primary dysmenorrhea. Acta Gymnica, 51, 0–5. https://doi.org/10.5507/ag.2021.014

Elverişli, G. B., Armağan, N., & Atilgan, E. (2023). Comparison of the efficacy of pharmacological and nonpharmacological treatments in women with primary dysmenorrhea: randomized controlled parallel-group study. Ginekologia Polska, 94(9), 687–697. https://doi.org/10.5603/GP.a2022.0009

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. Int. J. Environ. Res. Public Health, 16(713), 1–12. https://doi.org/10.3390/ijerph16050713

Ferreira, R. L., & Kulkarni, N. (2019). Effect of relaxation techniques on fatigue and headaches in premenstrual syndrome. International Journal of Yoga, Physiotherapy and Physical Education, 4(3), 37–43.

Fisher, C., Hickman, L., Adams, J., & Sibbritt, D. (n.d.). Cyclic perimenstrual pain and discomfort and Australian women ' s associated use of complementary and alternative medicine : a longitudinal study . Carole Fisher BSc Louise Hickman PhD Jon Adams PhD David Sibbritt

PhD Corresponding author – Professor Jon.

Girman, A., Lee, R., & Kligler, B. (2003). An integrative medicine approach to premenstrual syndrome. American Journal of Obstetrics and Gynecology, 188(5 SUPPL.), 56–65. https://doi.org/10.1067/mob.2003.403

Guruprasad, P., Sharma, U., & Palekar, T. (2019). Immediate Effect of Yoga Postures v / s Physiotherapy Exercises Along With K- Taping on Pain in Dysmenorrhea. Int J Sci Res Sci Technol., 6(2), 487–494.

Hemalatha, R., Shanmugananth, E., Murugaraj, T., & Velkumar, V. (2023). Effects of Barre Exercise Versus Pilates Versus Aerobic Exercise on Pre-Menstrual Syndrome Among College Going Coastal Students. Journal of Coastal Life Medicine, 11(December 2022), 2440–2451.

Ibrahim, Z. M., Alharkan, B. S., Alanzi, E. H., Alnasban, H. A., Alsuwailem, M. M., & Al Khalil, W. K. (2023). Efficacy of active stretching exercises against symptoms of primary dysmenorrhoea in young adult females: a randomized controlled trial. Physiotherapy Quarterly, 31(3), 46–52. https://doi.org/10.5114/pq.2023.115416

Indu, V., Gaurika, J., Dinesh, S., & Rk, S. (2020). Menstrual Problems in Undergraduate Medical Students : A Cross-sectional Study in a Medical College of North India. 86 Journal of South Asian Federation of Obstetrics and Gynaecology, 12(2), 85–90.

Jadhao, V. S. (2019). Impact of Yoga training intervention on menstrual disorders. International Journal of Physiology, Nutrition and Physical Education, 4(1), 1147–1149. https://www.journalofsports.com/pdf/2019/vol4issue1/PartY/4-1-291-117.pdf

Kamalifard, M., Yavari, A., Asghari-jafarabadi, M., & Ghaffarilaleh, G. (2017). The Effect of Yoga on Women ' s Premenstrual Syndrome : A Randomized Controlled Clinical Trial. International Journal of Women's Health and Reproduction Sciences, 5(3), 205–211. https://doi.org/10.15296/ijwhr.2017.37

Kaur, M., & Saha, S. (2018). A REVIEW ON DYSMENORRHEA AND IT ' S MANAGEMENT. World Journal of Pharmaceutical Research, 7(15), 328–336. https://doi.org/10.20959/wjpr201815-13029

KC, P., & Bhandary, S. (2022). Premenstrual syndrome and dysmenorrhea status before and after practicing yoga among selected women of reproductive age group living in Kathmandu valley: a mixed method study. Journal of General Practice and Emergency Medicine of Nepal, 9(14), 21–26. https://doi.org/10.59284/jgpeman13

Kizilirmak, A., Kartal, B., & Calpbinici, P. (2019). Prevalence of dysmenorrhea in young women and their coping methods. Medicine Science International Medical Journal Medicine, 8(2), 291–295. https://doi.org/10.5455/medscience.2018.07.8937

Kustriyanti, D., & Boediarsih, B. (2017). Muscle Relaxation Therapy for Dysmenorrhea. Health Notions, 1(4), 315–320. http://heanoti.com/index.php/hn/article/view/hn1404

Lata, P., & Lohan, U. (2018). Effect of Aerobic Training on Pre Menstrual Syndrome Amongst College Girl Students. International Journal of Physical Education & Sports Sciences, 13(5), 30–35. https://doi.org/10.29070/13/57739

M, V., & Rajan, D. J. K. (2022). Dysmenorrhea and perceived stress in the adolescent girls: Potential role of relaxation techniques. International Journal of Obstetrics and Gynaecological Nursing, 4(2), 79–84. https://doi.org/10.33545/26642298.2022.v4.i2b.107

Makuch, M. Y., Setubal, M. S., Barros, N. F., & Bahamondes, L. (2016). A Qualitative Study on the Practice of Yoga for Women with Pain-Associated Endometriosis. THE JOURNAL OF ALTERNATIVE AND COMPLEMENTARY MEDICINE, 22(12), 977–982. https://doi.org/10.1089/acm.2016.0021

Malhotra, P., Sharma, S. K., Kaur, R., & Gaur, R. (2020). Pre menstrual syndrome and health related quality of life among young adult females at Northern India : A cross-sectional study. Clinical Psychiatry, 6(1), 1–5.

Maya, D. E., Oktaviani, E. M., Baihaqi, M. H. Y., Yudistiran, Putra, M. A. C. D., Johandi, N., Qarani, M. I. W. Al, Nurmaelisa, Lastari, Apriliana, E., Febriani, A., Susilawati, S., & Hiden, H. (2022). EDUKASI PEMBUATAN NUGGET BERBAHAN DAUN KELOR DAN IKAN TUNA UNTUK PENCEGAHAN ANAK STUNTING DI DESA ANYAR LOMBOK UTARA Devintha. Jurnal Bakti Nusa, 3(2), 67–74. https://doi.org/10.1016/B978-0-323-88537-9.00012-X

N, S. B. (2022). Study to assess the Effectiveness of Foot Reflexology on Premenstrual syndrome and Dysmenorrhoea among nursing students - Pilot Study. International Journal of Mechanical Engineering Study, 7(1), 1678–1680.

Nurdiana, N., Chania, M. P., Nurvitasari, R. D., Nisa, A., Diana, S. W., Rochmah, E. I., Mayangsari, E., Rahardjo, B., Indrawan, I. W. A., Khotimah, H., Mintaroem, K., Norahmawati, E., & Raras, T. Y. M. (2023). The Effect of Soy Milk on Estrogen Receptor Alpha Expression in Medial Preoptic Area (MPOA) and in Spermatogonia, Testosterone Levels, and Androgen Receptors Expression in Male Wistar Rats (Rattus norvegicus). AIP Conference Proceedings, 2634. https://doi.org/10.1063/5.0111499

Nurvitasari, R. D., Cahyaningrum, D. G., Utami, E. S., & Adella, F. (2023). Edukasi Kesehatan Prenatal Yoga Sebagai Upaya Persiapan Menghadapi Persalinan pada Ibu Hamil Trimester III. Jurnal Pengabdian Masyarakat Al-Qodiri, 2(2), 102–109. http://jurnal.stikesalqodiri.ac.id/index.php/JPMA_STIKESAlQodiri/article/view/256

Nurvitasari, R. D., Cahyaningrum, D. G., Utami, E. S., & Nuryah, S. (2023). Mewujudkan Kehamilan yang Sehat Melalui Edukasi Mengenai Kebutuhan Nutrisi Ibu Hamil. Jurnal Pengabdian Masyarakat Al-Qodiri(JPMA), 2(3), 145–152.

Padmavathi, P. (2014). Effect of acupressure vs reflexology on pre-menstrual syndrome among adolescent girls--a pilot study. The Nursing Journal of India, 105(5), 236–239. https://doi.org/10.48029/nji.2014.cv506

Padmavathi, P. (2015). SYNDROME AMONG ADOLESECENT GIRLS IN SELECTED SCHOOLS AT ERODE , (Issue June).

Pathak, N. C., & Shukla, Y. U. (2023). Aerobic Exercise versus Yoga on Pre-Menstrual Symptoms and Primary Dysmenorrhea Among Adult Girls - A Comparative Interventional Study. International Journal of Science and Healthcare Research, 8(December), 105–118.

Raipure, A., & Patil, S. (2023). The Role of Benson's and Mitchell's Relaxation Techniques in the Management of Premenstrual Syndrome: An In-Depth Review. Cureus, 15(8), 1–9. https://doi.org/10.7759/cureus.43822

Rakhshaee, Z. (2011). Effect of Three Yoga Poses (Cobra, Cat and Fish Poses) in Women with Primary Dysmenorrhea: A Randomized Clinical Trial. Journal of Pediatric and Adolescent Gynecology, 24(4), 192–196. https://doi.org/10.1016/j.jpag.2011.01.059

Ramaiah, P., & Albokhary, A. A. (2021). Muscle Relaxation Strategies on Dysmenorrhea : An Interventional Study. Journal of Pharmaceutical Research International, 33(25A), 79–85. https://doi.org/10.9734/JPRI/2021/v33i25A31454

Riskiyani, J., Nandia, D., Fitriana, L., & Sukma, F. A. (2022). The Effect of Yoga Practice on Anxiety Levels and Sleep Quality Women of Childbearing Age When Facing Premenstrual Syndrome. Jurnal Eduhealt, 13(02), 581–587.

Saglam, H. Y., & Orsal, O. (2020). Complementary Therapies in Medicine E ff ect of exercise on premenstrual symptoms : A systematic review. Complementary Therapies in Medicine, 48. https://doi.org/10.1016/j.ctim.2019.102272

Sahu, R., & Barnwal, S. L. (2022). Effect of Yogic intervention on Premenstrual Syndrome among. DEV SANSKRITI: Interdisciplinary International Journal Vol, 20, 6–11.

Sara Azima, H. (2015). Effect of Isometric Exercises on Primary. Galen Medical Journal, 4(1), 26–32.

Sharma, U., & Gurprasad, P. (2019). Immediate effects of Physiotherapy v / s Yoga therapy on

Symptoms of Dysmenorrhea. Int J Sci Res Sci Technol., 6(4), 298–308.
Simsek Kucukkelepce, D., Unver, H., Nacar, G., & Tashan, S. T. (2021). The effects of acupressure and yoga for coping with premenstrual syndromes on premenstrual symptoms and quality of life. Complementary Therapies in Clinical Practice, 42(July 2020), 101282. https://doi.org/10.1016/j.ctcp.2020.101282
Somwanshi, S. B., Gaikwad, V. M., Dhamak, K. B., & Gaware, V. M. (2017). WOMEN ' S HEALTH ISSUE : A BRIEF OVERVIEW ON IRREGULARITIES IN. International Journal of Novel Research and Development, 2(5), 140–145.
Thejaswini, H. J., Prakash Narayana, B., Kumar Suhas, S., Savitha, H. P., & of Manasa Roga, D. (2014). Yoga and Healthy Life Style Modification in Prevention of Premenstrual Syndrome. International Journal of Yoga and Allied Sciences, 2014(2), 3. http://www.abc-of-yoga.com/yoga-and-health/yoga-for-dysmenorrhea-and-pms.asp
Tiwari, M., Gujral, T., Lachyan, A. S., Renai, T., Hanif, H., Rasheed, N., & Chauhan, A. (2022). Association of Primary Dysmenorrhea with Stress and BMI among Undergraduate Females Students – A Cross Sectional Study. Turkish Journal of Physiotherapy and Rehabilitation, 32(3), 19049–19057. www.turkjphysiotherrehabil.org
Triananinsi, N., Eryanti, R., & Puspitasari, S. N. A. (2021). The Effect of Yoga on Menstrual Pain Reduction in Adolescents. Journal of Epidemiology, 1(1), 24–30.
Tsai, S. (2016). Effect of Yoga Exercise on Premenstrual Symptoms among Female Employees in Taiwan. International Journal of Environmental Research and Public Health Article, 13(721), 1–11. https://doi.org/10.3390/ijerph13070721
UÇAK, H., & SÜZER ÖZKAN, F. (2022). Traditional and Complementary Medicine Practices Used by Women with Premenstrual Syndrome. Konuralp Medical Journal, 14(1), 23–29. https://doi.org/10.18521/ktd.778758
Vaghela, N., Mishra, D., Sheth, M., & Dani, V. B. (2019). To compare the effects of aerobic exercise and yoga on Premenstrual syndrome. Journal of Education and Health Promotion, 8(January), 1–6. https://doi.org/10.4103/jehp.jehp
Wadde, S. R. (2023). Review Study on Premenstrual Syndrome and Correlation with Menstruation and Doshashik Involvement as Per Ayurveda. 11(6), 1767–1772.
Widiastini, L. P., Sumawati, N. M. R., & Udayani, N. P. M. Y. (2023). Comparison of Pranayama Yoga and Surya Namaskar Yoga Towards Dysmenorrhea in Adolescent Girl. Jurnal Aisyah : Jurnal Ilmu Kesehatan, 8(1), 195–200. https://doi.org/10.30604/jika.v8i1.1573
Yang, N. Y., & Kim, S. D. (2016). Effects of a Yoga Program on Menstrual Cramps and Menstrual Distress in Undergraduate Students with Primary Dysmenorrhea: A Single-Blind, Randomized Controlled Trial. Journal of Alternative and Complementary Medicine, 22(9), 732–738. https://doi.org/10.1089/acm.2016.0058
Yashika, V., & Vasanthi, G. (2019). Effect of yoga and pilates on selected psychological variables on irregural menstrual cycle among college women. International Journal of Physiology, Nutrition and Physical Education(IJPNPE), 4(1), 853–855.

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