

**Mini Review***Copyright © All rights are reserved by Yasemin Cayir*

Primary Dysmenorrhea and Yoga: A Mini-Review

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Dysmenorrhea affects 45.3% of women as cyclic menstruation pain. In the treatment of dysmenorrhea, traditional and complementary medicine practices are preferred besides pharmacological drugs. One of these practices is yoga. In this study, we compiled studies investigating the effectiveness of yoga in the treatment and management of primary dysmenorrhea. In the Pubmed and Cochrane library web databases, a total of 40 studies were reached by scanning the studies containing the words dysmenorrhea and yoga. After the studies that did not have suitable features for our study were removed from these studies, a total of 9 scientific research, compilation and meta-analysis studies were determined and examined within the scope of our study. In this study, we reviewed and compiled studies to determine the effectiveness of yoga in the treatment of primary dysmenorrhea, menstrual pain and quality of life. Although it was designed differently and studied in different societies, it was determined that yoga was effective in dysmenorrhea in all studies. However, the relatively small number of participants in the study's results in the need for further studies with wide participation and laboratory support. Yoga is an effective method of treatment and management of dysmenorrhea with no side effects, easy, applicable, quality of life enhancing properties.

Keywords: Dysmenorrhea; Yoga; Complementary medicine; Traditional medicine**Introduction**

Dysmenorrhea is classically defined as cyclic menstruation pain, which goes with cramps, and may be accompanied by lower back pain, nausea and vomiting, headaches or diarrhea. A diagnosis of primary dysmenorrhea is usually made with the exclusion of possible causes, as there is no identifiable underlying pathology. Secondary dysmenorrhea is a complication of pathologies such as endometriosis, leiomyomas, PID, adenomyosis, endometrial polyps and menstrual outflow obstruction [1]. Primary dysmenorrhea affects women equally, regardless of race and socioeconomic status. However, increased pain duration or severity is positively associated with early age in menarche, long menstrual periods, smoking, and increased body mass index (BMI). In a study, it was found that primary dysmenorrhea is seen quite frequently at a rate of 45.3% [2]. Prostaglandins are the main responsible for the pathophysiology of dysmenorrhea. Prostaglandins stimulate

myometrium contractions and ischemia. In women with severe dysmenoria, the level of menstrual fluid prostaglandin is higher especially in the first two days of menstruation, so NSAIDs are preferred as the first choice in treatment [3]. Combined oral contraceptives are also considered to improve symptoms by lowering prostaglandins. GnRH agonists and androgens reduce prostaglandin production by causing endometrial atrophy, but long-term routine use is not recommended due to its side effects [1]. Traditional and complementary medicine practices are also frequently used in the treatment of dysmenorrhea. Many methods have been used such as oral vitamin E, fish oil, low-fat diet, exercise, local heating, acupuncture. In a study conducted in Australia, it was found that women with dysmenorrhea use more aromatherapy oils ($p < 0.05$) herbal medicines, Chinese medicines and other alternative therapies [4]. Yoga is also used to manage symptoms of dysmenorrhea. There are many scientific studies

and researches in the literature investigating the use of yoga in the treatment of dysmenorrhea. In this mini review, we tried to reveal the place of yoga in the treatment of dysmenorrhea in the light of current scientific studies by compiling the studies investigating the effectiveness of yoga in the treatment of primary dysmenorrhea.

Literature Review

Pubmed and Cochrane library databases were scanned for studies involving the words yoga and dysmenorrhea, including all years 2020 and before, to determine studies that investigated the effectiveness of yoga therapy in dysmenorrhea treatment. A total of 40 studies were determined as a result of the scan, and repeated studies, scan results that had insufficient data or were not available, unrelated to the subject, and non-English results were removed from these studies. Thus, a total of 9 scientific research, compilation and meta-analysis studies were determined and examined within the scope of our study. It was noted that these studies included in the study were studies made in the last 9 years. Of the 9 studies included in our study and conducted between 2011 and 2019, 4 were original research, 2 were randomized controlled trials, 2 were systematic review and 1 was a meta-analysis study.

The only meta-analysis study that we included in our review is the meta-analysis study of 4 randomized controlled studies with a total of 230 participants [5]. In this study, it was determined that yoga had a statistically significant effect on menstrual pain by comparing pain in primary dysmenorrhea patients with and without yoga. In a systematic review investigating the reduction in pain severity of the treatment methods used in the treatment of dysmenorrhea, a statistically significant reduction in the pain scale was found in the yoga-applied group (3.2, 95% CI 2.2 to 4.2) [6]. In this study, it was found that there was a decrease in the severity of pain in the yoga group than the treatment applications such as acupuncture / acupressure, heat and transcutaneous electrical nerve stimulation. In a systematic review investigating improvement in quality of life with yoga in women with primary dysmenorrhea, 14 studies were examined and it was concluded that there was an increase in quality of life with yoga and that it should be recommended in dysmenorrhea management.

In a systematic review investigating the improvement of quality of life with yoga in primary dysmenorrhea women, 14 studies were examined, and it was concluded that there was an increase in the quality of life with yoga and should be recommended in the management of dysmenorrhea [7].

In a randomized controlled, single-blind study, a study was conducted on a total of 40 people as a group and control group who practiced yoga for 60 Minutes one day per 12-week Week [8]. In the study, Visual Analogue Scale for Pain and the Menstrual Distress Questionnaire was applied and there was a statistically significant decrease in pain intensity and menstrual distress in the group practicing yoga ($p = 0.001$).

Primary dysmenorrhea pain intensity and pain duration in three different yoga poses (cobra, cat and fish poses) for comparing between control groups and a total of 92 adolescents in a randomized controlled study of yoga have significant positive effects on the severity and duration of the pain the results that were obtained [9]. In a study conducted in Taiwan compared 64 women's periods before and after 12 weeks of yoga for 50 minutes, twice a week, and found that there was a statistically significant decrease in the rates of menstrual analgesic drug use and menstruation affecting work life after yoga [10].

In a study conducted in Thailand, the group who practiced yoga for 12 weeks for 30 minutes twice a week was compared with the control group [11]. The study, which consisted of a total of 34 participants, found that the yoga-performing group had improvements in menstrual pain, physical fitness and quality of life. Two of the studies included in our review investigated blood and hormone changes in individuals who practiced yoga. In the first of these studies, the dysmenorrhea group and the healthy group were compared, and serum homocysteine levels were measured, with all participants doing yoga 2 days a week, 30 minutes a week, for 8 Weeks [12]. Although homocitein levels decreased after yoga in both groups, homocitein level and menstrual distress scores in dysmenoreli group were significantly decreased compared to healthy group. There was no significant difference in serum nitrite oxide level in the study.

In the other study, a total of 126 patients with menstrual disorders were randomized, the group who practiced Yoga nidra 5 days a week for 35-40 minutes, 6 months, and the control group were investigated for hormonal changes [13]. Yoga nidra is a powerful meditation technique in which the mind remains conscious during the "unconscious" state associated with deep sleep. As a result of the study, Thyroid-stimulating hormone ($p < 0.002$), follicle-stimulating hormone ($p < 0.02$), luteinizing hormone ($p < 0.001$), and prolactin ($p < 0.02$) levels of the yoga nidra group decreased significantly after 6 months compared to the control group. In this study, patients with menstrual disorders such as pathological amenorrhea, oligomenorrhea, polymenorrhea, menorrhagia, metrorrhagia and hypomenorrhea were included in the group and only patients with dysmenorrhea were not screened.

Conclusions

Studies in literature have shown that traditional and complementary therapy practices are commonly applied in the treatment of dysmenorrhea. In this study, we reviewed studies investigating the effectiveness of yoga, which is one of the traditional and complementary medicine practices, in dysmenorrhea treatment. In all of the article, compilation and meta-analysis studies included in the scope of our review, it was observed that yoga had results in improved treatment effectiveness, pain management and quality of life in dysmenorrhea.

The limitations observed in the studies included in our review are that the number of participants is relatively small, the results obtained are not supported by laboratory tests, and the participants are non-athletes. Further studies require extensive participation, including laboratory tests such as Prostaglandin E2, F2 alpha, and comparison with control groups such as athletes who exercise. Yoga is a treatment approach that can be recommended in all women and especially in patients with dysmenorrhea as a method that has no side effects, can be easily done at home individually and can provide an increase in the quality of life.

Acknowledgement

None.

Conflict of Interest

No conflict of interest.

References

- (2016) Williams Gynecology. (3rd edn) McGraw-Hill Education.
- Polat A, Celik H, Gurates B, Kaya D, Nalbant M, et al. (2009) Prevalence of primary dysmenorrhea in young adult female university students. *Archives of Gynecology and Obstetrics* 279(4): 527-32.
- Chantler I, Mitchell D, Fuller A (2009) Diclofenac Potassium Attenuates Dysmenorrhea and Restores Exercise Performance in Women with Primary Dysmenorrhea. *The Journal of Pain*10(2): 191-200.
- Fisher C, Adams J, Hickman L, Sibbritt D (2016) The use of complementary and alternative medicine by 7427 Australian women with cyclic perimenstrual pain and discomfort: a cross-sectional study. *BMC Complement Altern Med* 16: 129.
- Kim SD (2019) Yoga for menstrual pain in primary dysmenorrhea: A meta-analysis of randomized controlled trials. *Complement Ther Clin Pract* 36: 94-99.
- Kannan P, Claydon LS (2014) Some physiotherapy treatments may relieve menstrual pain in women with primary dysmenorrhea: a systematic review. *Journal of Physiotherapy* 60(1): 13-21.
- McGovern CE, Cheung C (2018) Yoga and Quality of Life in Women with Primary Dysmenorrhea: A Systematic Review. *J Midwifery Womens Health* 63(4): 470-482.
- Yang NY, Kim SD (2016) Effects of a Yoga Program on Menstrual Cramps and Menstrual Distress in Undergraduate Students with Primary Dysmenorrhea: A Single-Blind, Randomized Controlled Trial. *J Altern Complement Med* 22(9): 732-738.
- Rakhshae Z (2011) Effect of three yoga poses (cobra, cat and fish poses) in women with primary dysmenorrhea: a randomized clinical trial. *J Pediatr Adolesc Gynecol* 24(4): 192-196.
- Tsai SY (2016) Effect of Yoga Exercise on Premenstrual Symptoms among Female Employees in Taiwan. *Int J Environ Res Public Health* 13(7): 721.
- Yonglithipagon P, Muansiangsai S, Wongkhumngern W, Donpunha W, Chanavirut R, et al. (2017) Effect of yoga on the menstrual pain, physical fitness, and quality of life of young women with primary dysmenorrhea. *Journal of Bodywork and Movement Therapies* 21(4): 840-846.
- Chien LW, Chang HC, Liu CF (2012) Effect of Yoga on Serum Homocysteine and Nitric Oxide Levels in Adolescent Women with and Without Dysmenorrhea. *The Journal of Alternative and Complementary Medicine* 19(1): 20-23.
- Rani M, Singh U, Agrawal GG, Natu SM, Kala S, et al. (2013) Impact of Yoga Nidra on Menstrual Abnormalities in Females of Reproductive Age. *The Journal of Alternative and Complementary Medicine* 19(12): 925-929.