

The Role of Yoga in Alleviating Pre-Menstrual Syndrome Among Female Athletes



Shrikant¹, SM Farooque¹ and Rahul Kanojiya²

¹Department of Physical Education, Lakshmbai National Institute of Physical Education (NERC), Tepesia Sports Complex, Sonapur (Guwahati), Assam, India

²Department of Physical Education Pedagogy, Lakshmi bai National Institute of Physical Education, Shakti Nagar, Mela Road, Gwalior, India

Submission: July 09, 2026; **Published:** August 07, 2026

***Corresponding author:** SM Farooque, Department of Physical Education, Lakshmbai National Institute of Physical Education (NERC), Tepesia Sports Complex, Sonapur (Guwahati), Assam, India

Abstract

Objective: The objective of this study is to examine the impact of a well-designed yoga training program on reducing indicators of premenstrual syndrome (PMS) in female athletes.

Material and Methods: We selected twenty female athletes aged 16 to 22 from Lakshmbai National Institute of Physical Education and divided them into two groups: an experimental group (yoga training) and a control group (daily schedule). The experimental group participated in a six-week yoga training program consisting of asanas, pranayama, and yoga nidra, while the control group followed their regular schedule. We assessed PMS symptoms using the Premenstrual Syndrome Scale (PMSS) before and after the intervention and analysed the results using ANCOVA.

Results: The analysis revealed that the experimental group showed a significant reduction in PMS symptoms compared to the control group. The experimental group had a mean PMS score of 129.60 ± 10.68 , while the control group had a mean score of 110.60 ± 7.12 . The ANCOVA results indicated a significant difference between the two groups ($p = 0.032$), with the yoga group experiencing a greater reduction in symptoms. The study found a significant reduction in PMS symptoms among the experimental group compared to the control group.

Conclusions: The research findings indicate that a well-organized Yoga Training Program (YTM) is a successful intervention for reducing symptoms of Premenstrual Syndrome (PMS) in female athletes. Integrating yoga into their training routine might augment their general state of health and promote performance by effectively controlling symptoms of Premenstrual Syndrome (PMS).

Keywords: Yoga; Premenstrual Syndrome Scale (PMSS); Female Athletes; Premenstrual Syndrome (PMS); Yoga Training Module (YTM)

Abbreviations: YTM: Yoga Training Module; PMSS: Premenstrual Syndrome Scale; PMS: Premenstrual Syndrome

Introduction

Premenstrual syndrome (PMS) is a prevalent and incapacitating chronic condition that impacts a significant proportion of women in their reproductive years. This condition is characterized by physical, emotional, and behavioural symptoms that occur cyclically during the luteal phase of the menstrual cycle. The severity of these symptoms can vary, impacting on a woman's daily functional abilities and overall quality of life [1]. Premenstrual syndrome (PMS) can provide further challenges for female athletes, affecting not just their daily routines but also their athletic abilities and overall level of health. Due to its physical, mental, and emotional benefits, researchers are

increasingly investigating yoga, an ancient Indian practice, as a holistic treatment for PMS symptoms.

Yoga derives from the Sanskrit word "Yuj" ("युज्"), which means the union of individual and universal consciousness [2]. Yoga is defined by Maharshi Patanjali as "Yogaschitta vrtti Nirodhah," which means it is a state of mind that is balanced and free of mental fluctuations [3]. The practice of yoga, including physical positions (asanas), breathing techniques (pranayama), and meditation, is recognized for its capacity to enhance physical flexibility, strength, and balance, as well as improve mental clarity, emotional stability, and stress reduction [4,5]. The integrative

character of yoga makes it a viable therapy for symptoms of PMS, since it addresses the physical, psychological, and emotional aspects of the illness holistically [6].

Multiple studies have demonstrated that yoga can effectively alleviate the physical manifestations of PMS symptoms. Research has shown a correlation between the practice of yoga and decreased incidence of pain and discomfort, increased flexibility, and greater strength and endurance. Female athletes who are suffering physical symptoms of PMS may find these benefits particularly advantageous [7]. Nagarathna & Nagendra [8] have shown that several yoga postures, such as forward bends and restorative poses, can relieve typical symptoms of Premenstrual Syndrome (PMS) such as lower back discomfort, bloating, and menstrual cramps. Study conducted by Shushma et al. (2013) found that women who regularly engaged in yoga saw a notable reduction in symptoms of Premenstrual Syndrome (PMS), including decreased breast soreness and stomach pain.

These findings suggest that including yoga into a female athlete's training regimen could alleviate the physical pain induced by PMS, therefore enabling the athlete to sustain intense training and achieve optimal performance. Among female athletes, the psychological and emotional components of Premenstrual Syndrome (PMS), including mood fluctuations, anxiety, impatience, and despair, can provide challenges. Prioritization of mindfulness, relaxation, and breath control in yoga can provide notable psychological benefits in the management of these symptoms [9]. Athletes can enhance their emotional control and mitigate the adverse impacts of PMS on their mental health by adopting yoga's mindfulness practices, which promote heightened awareness of their body and emotions [10].

Yoga is widely recognized for its potent ability to reduce stress and anxiety. Numerous studies have demonstrated that consistent engagement in yoga notably reduces cortisol levels, the primary hormone associated with stress [11]. Effective stress and anxiety management is crucial for female athletes to maintain concentration and achieve optimal performance. In randomized controlled research conducted by Yoshino et al. (2014), it was shown that yoga practitioners exhibited reduced levels of anxiety and sadness during the premenstrual period compared to non-yogis. These findings indicate that yoga might be a beneficial mental health treatment for athletes suffering from PMS.

In addition to its physiological and psychological advantages, yoga has the potential to enhance emotional equilibrium and mitigate stress-induced behavioural responses, which are typically intensified during the premenstrual phase. Proper breathing exercises and relaxation techniques are essential elements of yoga routines that regulate the autonomic nervous system, promoting tranquillity and reducing the severity of emotional and behavioural symptoms [12]. The whole methodology of yoga, encompassing the physical, mental, and spiritual aspects, offers a rich basis for managing symptoms of PMS. By including physical

exercise, mindfulness, and healthy living principles, this approach encourages a well-rounded lifestyle that can enhance an athlete's general well-being [11].

Previous studies have shown that consistent engagement in yoga can improve the quality of sleep, enhance the functioning of the immune system, and create a feeling of inner tranquility and overall wellness. These benefits are particularly important for female athletes who are juggling the challenges of training and competition while also dealing with Premenstrual Syndrome (PMS) [13]. The metaphysical aspect of yoga, which fosters a feeling of interconnectedness and direction, can also provide athletes with a heightened sense of significance and motivation, therefore enhancing their ability to efficiently cope with symptoms of post-natal stress disorder [14].

Yoga is a viable, comprehensive approach to treating premenstrual syndrome in female athletes. Its physical, psychological, and emotional advantages might help alleviate PMS symptoms, helping athletes to retain their performance and general well-being. Female athletes who incorporate yoga into their training programs can increase their resilience to PMS symptoms, improve their quality of life, and strike a healthy balance between their athletic goals and menstrual health. This study is to investigate the effect of a structured yoga training module on PMS symptoms in female athletes.

Materials and Methods

Study Participants

Twenty female athletes (N = 20), aged 16-22, from the Lakshmibai National Institute of Physical Education, Northeast Regional Centre, Guwahati (Assam), India, were recruited for this study. A single-group test design was adopted. Participants were evenly divided into an experimental group (yoga training) and a control group (routine daily schedule). Ethical approval was obtained prior to the initiation of the study.

Study Organization

After reviewing many yoga textbooks, theses and dissertations, research publications, and consulting with yoga professionals, the Yoga Training Module (YTM) was chosen. Table 1 illustrates the yoga training module, which consisted of sukshma vyayama (subtle exercise), surya namaskar (sun salutation), asanas (postures), pranayama (breathing exercises), and yoga nidra. The experimental group received a yoga training curriculum. A yoga specialist provided the training, which was assisted by a female expert. For six weeks, the training was delivered across five working days, with one morning session.

The Premenstrual Syndrome Scale (PMSS) was employed in the data gathering process. P. Padmavathi, Dr. Raja Shankar, Dr. N. Kokilavani, K. Dhanapal, and B. Ashok constructed this standard scale. The 40-item self-administered Premenstrual Syndrome Scale was created by Padmavathi et al. in 2014 to

gauge respondents' premenstrual symptoms. We instructed the athlete to complete the questionnaire based on the premenstrual syndrome information. We drew the study's conclusions by comparing the athletes' pretest and post-test results, collected for each of the two groups. Prior to the training, a pre-test was given to both groups. The experimental group received a post-test after six weeks of regular training, whereas the control group received a post-test based on their daily schedule.

Procedure

The experimental group participated in a six-week yoga training program that consisted of 60 minutes sessions held five days a week. The yoga training module (YTM) included a combination of asanas (postures), pranayama (breathing exercises), and yoga nidra. The control group didn't participate in any activities. We administered the Pre-menstrual Syndrome Scale (PMSS) to all athletes before and after the intervention to gauge the severity of their PMS symptoms.

Statistical Analysis

Pre-test and post-test scores were analysed using ANCOVA to determine the effectiveness of the Yoga training module on premenstrual syndrome (PMS).

Results

We collected pre-test and post-test scores and analysed the initial and final test scores using ANCOVA for pre-menstrual syndrome to establish the significant difference between the experimental and control groups. There are two groups: one experimental group and one control group. Based on the pre-test and post-test results, we reported the descriptive statistics and covariance analysis in tabular form. Table 2 shows the mean and standard deviation of the pre-menstrual syndrome in the experimental and control groups. Table 2 shows that the experimental group had a mean and SD of 129.60 ± 10.68 , while the control group's mean and SD were 110.60 ± 7.12 .

Table 1. Six Weeks Yoga Training Module.

Week	Yogic Practices	Round/Intensity	Duration		Frequency
			Maintain	Rest	
	Sukshma Vyayama		4 minutes		
Week 1-6	Surya Namaskar	4 rounds	1.10 minutes	20 seconds	5 Days
	Supta Matsyendrasana	2 times	45 seconds	30 seconds	
	Bhujangasana	2 times	45 seconds	30 seconds	
	Malasana	2 times	45 seconds	30 seconds	
	Vajrasana	2 times	45 seconds	30 seconds	
	Matsyasana	2 times	45 seconds	30 seconds	
	Setubandhasana	2 times	45 seconds	30 seconds	
	Marjaryasana	2 times	45 seconds	30 seconds	
	Paschimottan asana	2 times	45 seconds	30 seconds	
	Balasana	2 times	45 seconds	30 seconds	
	Baddhakon asana	2 times	45 seconds	30 seconds	
	Anuloma-Viloma Pranayama	6 times	40 seconds	30 seconds	
	Bhastrika Pranayama	6 times	40 seconds	30 seconds	
	Bhramari Pranayama	6 times	40 seconds	30 seconds	
	Yoga Nidra	7 minutes			

Table 2: Mean and Standard Deviation of Pre-menstrual syndrome in Different Groups Post-Treatment.

Treatment	Mean	Std. Deviation	N
Experimental group	129.6	10.68	10
control group	110.6	7.12	10
Total	120.1	13.15	20

Table 3: ANCOVA Table Dependent Variables: Pre-menstrual syndrome post-treatment.

Source	Type I Sum of Squares	df	Mean Square	F	Sig.
Pre-test	2999.66	1	2999.66	232.27	0.001
Groups	70.58	1	70.58	5.46	0.032*
Error	219.54	17	12.91		
Corrected Total	3289.8	19			

We used ANCOVA to analyse the study's findings at the 0.05 level of significance. A significant level of $p \leq 0.05$ was established. Table 3 displays the p-value of 0.032 that is associated with the F-statistics for PMS symptoms. The experimental group's PMS symptoms were significantly different from those of the control group, according to the PMSS scores. The post-test revealed that the experimental group had much fewer PMS symptoms than the control group, which had not received any instruction.

Discussion

In women of reproductive age, premenstrual syndrome (PMS) is a prevalent disorder marked by a variety of behavioural, emotional, and physical symptoms that consistently manifest during the luteal phase of the menstrual cycle. Female athletes are especially susceptible to the adverse consequences of premenstrual syndrome (PMS), which can impair their performance and general welfare because of the physical and psychological stress linked to demanding training and competition. Female athletes may experience heightened difficulty with symptoms of premenstrual syndrome (PMS), which can significantly hinder their everyday activities, sports performance, and general quality of life [1].

Yoga, a time-honoured Indian tradition that integrates physical positions, mindful breathing techniques, and yoga nidra, is gaining popularity as a holistic approach to alleviate symptoms of PMS. Multiple studies have shown that yoga not only improves physical flexibility, strength, and balance, but also boosts cognitive clarity, emotional stability, and decreases stress levels [5]. These attributes provide yoga a feasible alternative treatment for PMS, effectively addressing the multifaceted nature of the condition [6]. Numerous studies have demonstrated yoga's physiological efficacy in alleviating PMS symptoms. Engaging in yoga practice improves muscular strength and stamina, maximizes flexibility, and alleviates pain and suffering.

The benefits are particularly advantageous for female athletes who may have physical ailments such as bloating, cramps during menstruation, and lower back pain [7]. Nagarathna & Nagendra [8] have shown that specific yoga positions, such as forward bends and restorative poses, help relieve common symptoms of Premenstrual Syndrome (PMS). The Yogic Intervention can effectively reduce pre-menstrual symptoms. Hence, yogic therapies, including asanas and breathing methods, might be advantageous for teenage girls (aged 14 to 17) who are suffering from the symptoms of pre-menstrual syndrome (PMS). In this

regard, Shushma, Rani, and Kumar (2013) found that women who practiced yoga reported significantly reduced levels of abdominal pain and breast soreness.

Thus, including yoga into an athlete's training routine might reduce their pain and allow them to sustain high-intensity and high-performance exercise. Potential signs of premenstrual syndrome (PMS) include mood swings, anxiety, irritability, sadness, and other psychological and emotional disturbances. These symptoms can be particularly troublesome for female athletes. The focus on awareness, relaxation, and breath control in yoga can provide substantial psychological benefits in the management of these symptoms [9]. Yoga's mindfulness exercises enhance emotional and physical consciousness, therefore enabling individuals to modulate their emotions more effectively and mitigate the adverse impact of PMS on mental well-being [10].

Research indicates that consistent yoga practice markedly decreases cortisol levels, the primary stress hormone crucial for managing stress and anxiety [15]. The study conducted by Yoshino, Takahashi, and Matsumoto (2014) revealed that those who practiced yoga exhibited reduced levels of anxiety and sadness during the premenstrual period compared to those who did not practice yoga. This suggests that yoga has the capacity to serve as a mental health intervention for athletes experiencing PMS. The holistic methodology of yoga integrates techniques to augment emotional equilibrium and regulate stress-induced behavioural responses, frequently intensified during the premenstrual phase. Administering breathing exercises and relaxation techniques can effectively regulate the autonomic nerve system, therefore foster a state of calmness and reduce the intensity of emotional and behavioural symptoms [12].

A study found that people who took regular yoga classes experienced fewer premenstrual (PMS) symptoms and reported less period pain. There were also notable reductions in breast tenderness and abdominal swelling. These findings indicate that yoga can be a beneficial strategy for female athletes to manage the behavioural and emotional components of PMS, assisting them in maintaining emotional resilience and a positive mindset throughout their menstrual cycles [16]. A study conducted by (Chang et al.,) [17] revealed that Yoga has been shown to provide numerous physical and mental health benefits. This study confirms that yoga can effectively reduce premenstrual symptoms, including depressive symptoms, physical symptoms, and anger/irritability, as well as their impact on daily routines, hobbies/social activities, and relationships. Yoga is a safe, simple,

and cost-effective approach that can be practiced alone anytime and anywhere for health purposes. The integrative spirit of yoga promotes a well-rounded lifestyle encompassing physical activity, mindfulness, and good living habits, therefore enhancing the general well-being of athletes [11].

Research has demonstrated that consistent yoga practice improves sleep quality, boosts immunological function, and promotes inner tranquillity and well-being, all essential for female athletes juggling the competing demands of training and postpartum stress disorder [13]. Furthermore, the spiritual aspect of yoga, which emphasizes the idea of connection and purpose, could potentially enhance athletes' sense of purpose and motivation, thereby improving their ability to cope with symptoms of premenstrual syndrome [14]. Female athletes highly recommend incorporating yoga into their training regimens as a supplementary exercise to manage PMS symptoms, given its numerous benefits. Coaches and sports health professionals may design yoga sessions that specifically target postures, breath exercises, and relaxation techniques that alleviate pre-menstrual syndrome (PMS) symptoms, aiming to enhance the psychological and physical health of their players.

Conclusion

An investigation revealed that a methodical yoga routine is effective in managing symptoms of premenstrual syndrome (PMS) in female athletes. Yoga presents a pragmatic and all-encompassing method for mitigating premenstrual syndrome in female athletes. Its physiological, psychological, and emotional advantages may alleviate PMS symptoms, enabling athletes to sustain performance and general well-being. Incorporating yoga into the exercise regimens of female athletes can augment their ability to withstand symptoms of pre-menstrual syndrome (PMS), improve their overall well-being, and attain a more harmonious integration of sports and menstrual health. Furthermore, imparting knowledge to female athletes on the advantages of yoga and offering tools such as supervised yoga sessions or online presentations might assist them in adopting proactive measures to control their symptoms of pre-menstrual syndrome (PMS). Additional research is necessary to examine the enduring advantages of yoga on pre-menstrual syndrome (PMS) and athletic performance, as well as to ascertain the most advantageous yoga techniques for female athletes.

References

- Yonkers KA, O'Brien PS, Eriksson E (2008) Premenstrual syndrome. *The Lancet* 371(9619): 1200-1210.
- Singh V (2018) Comparative study of teaching methods between traditional and modern yoga. *International Journal of Research Culture Society* p: 9.
- Saraswati SS (2016) Four chapters on freedom: commentary on the yoga sutras of Sage Patanjali. Munger, Bihar: Yoga.
- Craft LL, Perna FM (2004) The Benefits of Exercise for the Clinically Depressed. *The Primary Care Companion for CNS Disorders* 6(3): 104-111.
- Ross A, Thomas S (2010) The Health Benefits of Yoga and Exercise: A Review of Comparison Studies. *The Journal of Alternative and Complementary Medicine* 16(1): 3-12.
- Telles S, Singh N, Balkrishna A (2012) Managing Mental Health Disorders Resulting from Trauma through Yoga: A Review. *Depression Research and Treatment* 2012: 1-9.
- Rakhshae 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.
- Nagarathna R, Nagendra HR (1985) Yoga for bronchial asthma: a controlled study. *BMJ* 291(6502): 1077-1079.
- Uebelacker LA, Epstein-Lubow G, Gaudiano BA, Tremont G, Battle CL, et al. (2010) Hatha Yoga for Depression: Critical Review of the Evidence for Efficacy, Plausible Mechanisms of Action, and Directions for Future Research. *Journal of Psychiatric Practice* 16(1): 22-33.
- Brotto LA, Basson R, Luria M (2008) A Mindfulness-Based Group Psychoeducational Intervention Targeting Sexual Arousal Disorder in Women. *The Journal of Sexual Medicine* 5(7): 1646-1659.
- Woodyard C (2011) Exploring the therapeutic effects of yoga and its ability to increase quality of life. *International Journal of Yoga* 4(2): 49-54.
- Kirkwood G, Rampes H, Tuffrey V, Richardson J, Pilkington K (2005) Yoga for anxiety: a systematic review of the research evidence. *British Journal of Sports Medicine* 39(12): 884-891.
- Riley KE, Park CL (2015) How does yoga reduce stress? A systematic review of mechanisms of change and guide to future inquiry. *Health Psychology Review* 9(3): 379-396.
- Smith C, Hancock H, Blake-Mortimer J, Eckert K (2007) A randomised comparative trial of yoga and relaxation to reduce stress and anxiety. *Complementary Therapies in Medicine* 15(2): 77-83.
- Chong CS, Tsunaka M, Tsang HW, Chan EP, Cheung WM (2011) Effects of yoga on stress management in healthy adults: A Systematic Review. *Alternative Therapies in Health and Medicine* 17(1): 32-38.
- Tsai SY (2016) Effect of Yoga Exercise on Premenstrual Symptoms among Female Employees in Taiwan. *International Journal of Environmental Research and Public Health* 13(7): 721.
- Chang HC, Cheng YC, Yang CH, Tzeng YL, Chen CH (2023) Effects of Yoga for Coping with Premenstrual Symptoms in Taiwan-A Cluster Randomized Study. *Healthcare* 11(8): 1193.



This work is licensed under Creative Commons Attribution 4.0 License
DOI: [10.19080/JYP.2026.13.555853](https://doi.org/10.19080/JYP.2026.13.555853)

**Your next submission with Juniper Publishers
will reach you the below assets**

- Quality Editorial service
- Swift Peer Review
- Reprints availability
- E-prints Service
- Manuscript Podcast for convenient understanding
- Global attainment for your research
- Manuscript accessibility in different formats

(Pdf, E-pub, Full Text, Audio)

- Unceasing customer service

Track the below URL for one-step submission

<https://juniperpublishers.com/online-submission.php>