Clinical Evaluation of a Yoga-Based Lifestyle Intervention on Premenstrual Symptoms, and Quality of Life in a Young Woman: A Case Study

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ABSTRACT

Background: Premenstrual symptoms are common among reproductive-age women and may affect physical, psychological, social, and occupational functioning. Lifestyle factors such as stress, poor sleep, unhealthy diet, prolonged screen exposure, and physical inactivity may further contribute to symptom severity. Ayurveda emphasizes balanced *Dosha*, *Agni*, *Ahara*, *Vihara*, *Nidra*, and mental well-being for maintaining health.

Objective: To evaluate the clinical effect of a 12-week *Yoga*-based lifestyle intervention on premenstrual symptoms, menstrual pain, sleep quality, and quality of life in a young woman.

Methods: A single-case clinical study was conducted in a 29-year-old unmarried female office worker with recurrent premenstrual symptoms for 3–4 years. The symptoms occurred approximately one week before menstruation and recurred cyclically. The patient had a regular 30-day menstrual cycle and severe menstrual pain. Ayurvedic assessment revealed *Vata-Pittaja Prakriti*, *Madhyama Agni*, and *Madhyama Koshtha*. A 12-week integrated intervention consisting of *Yoga Asanas*, *Pranayama*, relaxation, sleep hygiene, dietary modification, stress management, screen-time regulation, and physical activity was administered. Outcomes were assessed using symptom grading, menstrual pain score, sleep quality, and quality-of-life assessment.

Results: Progressive improvement was observed in premenstrual symptoms, menstrual pain, sleep quality, and overall quality of life. Mood-related, somatic, and behavioural symptoms decreased gradually. Menstrual pain reduced from severe to mild intensity, while sleep and daily functioning improved.

Conclusion: The 12-week integrated Yoga-based lifestyle intervention showed beneficial clinical effects on premenstrual symptoms, menstrual pain, sleep quality, and quality of life in this case. Further controlled studies with larger sample sizes are required.

Keywords: Premenstrual Symptoms, Menstrual Pain, Yoga, Lifestyle Modification, Sleep Quality, Quality of Life, Ayurveda, Case Study.

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INTRODUCTION

Ayurveda is a holistic system of life science that emphasizes the maintenance of health through the equilibrium of *Dosha*, *Dhatu*, *Mala*, *Agni*, and the proper functioning of the mind and senses.

प्रयोजनं चास्य स्वस्थस्य स्वास्थ्य रक्षणम । आतुरस्य विकार प्रशमनम् च

The concept of health in Ayurveda extends beyond the absence of disease and includes physical, mental, and social well-being. *Ahara, Vihara, Nidra*, and

mental balance are considered important

determinants of health and disease.

शशासृक्प्रतिमं यत्तु यद्वा लाक्षारसोपमम् । तदार्तवं प्रशसन्ति यद्वासो न विरज्ञयेत्।

The menstrual cycle is an important physiological process in women of reproductive age. Menstrual health is influenced by multiple factors, including nutritional status, physical activity, psychological stress, sleep, and lifestyle. Disturbances in these factors may influence the physical and psychological well-being of women during the premenstrual and menstrual phases.

Premenstrual symptoms refer to a recurrent group of physical, emotional, and behavioural symptoms occurring during the late luteal phase of the menstrual cycle and generally improving with the onset or completion of menstruation. Common symptoms include irritability, mood changes, anxiety, low mood, fatigue, headache, abdominal cramps, backache, breast tenderness, bloating, food cravings, and sleep disturbances. The severity of these symptoms varies among individuals and may interfere with occupational and social functioning.

In modern life, young women are increasingly exposed to sedentary occupational patterns, prolonged screen exposure, irregular dietary habits, psychological stress, and inadequate sleep. These lifestyle factors may contribute to poor physical and mental well-being. Office-based work frequently involves prolonged sitting and reduced physical activity, while excessive use of electronic devices may further disturb sleep patterns.

Ayurveda emphasizes the importance of following a balanced lifestyle, appropriate *Ahara*, regular physical activity, adequate *Nidra*, and mental equilibrium. An irregular lifestyle and improper dietary practices may disturb the physiological balance of *Dosha* and *Agni* and may adversely influence overall health.

Yoga is a holistic mind-body practice involving *Asana*, *Pranayama*, relaxation, and meditative practices. When combined with appropriate lifestyle modification, *Yoga* may provide a comprehensive non-pharmacological approach for women experiencing recurrent premenstrual and menstrual complaints.

AYURVEDIC PERSPECTIVE OF MENSTRUAL AND PREMENSTRUAL HEALTH

According to Ayurveda, healthy menstruation (*Prakrita Artava*) depends on the balanced functioning of *Doshas*, *Agni*, *Dhatus*, and *Apana Vayu. Apana Vayu* plays a major role in the proper downward movement and expulsion of menstrual blood. Premenstrual symptoms such as abdominal pain, mood changes, irritability, bloating, breast tenderness, fatigue, and sleep disturbances may be understood through the involvement of *Vata, Pitta, Kapha, Agni*, and *Manasika Bhavas*. A balanced *Ahara, Vihara, Dinacharya*, adequate sleep, and stress management are considered important for maintaining menstrual and premenstrual health

YOGA AND LIFESTYLE MODIFICATION IN PREMENSTRUAL HEALTH

Yoga provides an integrated approach involving physical postures, regulated breathing, relaxation, and mental awareness. Gentle *Yoga* practices may promote flexibility and relaxation, while *Pranayama* and relaxation techniques may support stress regulation and improve subjective well-being. The present intervention included gentle *Asanas* focusing on the spine, pelvic region, and general relaxation. *Pranayama* practices were incorporated to encourage slow and regulated breathing. Relaxation practices were included to address severe perceived stress and disturbed sleep.

Lifestyle modification was directed toward correcting the major contributing factors identified in the patient, including excessive screen exposure, unhealthy dietary habits, sedentary behaviour, disturbed sleep, and psychological stress.

The intervention therefore followed an integrated approach consisting of:

- *Yoga Asana*
- *Pranayama*
- Relaxation/*Yoga Nidra*
- Sleep hygiene
- Dietary modification
- Screen-time regulation
- Regular physical activity
- Stress management

CASE REPORT

A 29-year-old unmarried female office worker presented with recurrent premenstrual and menstrual complaints for 3–4 years. Her symptoms occurred approximately one week before menstruation and improved within about one week.

Chief complaints included: mood changes, irritability, anxiety, low mood, abdominal cramps, backache, breast tenderness, bloating, headache, fatigue, food cravings, increased appetite, and sleep disturbance. Menstrual pain was severe.

Menstrual History

Parameter	Finding
Age at Menarche	14 years
Menstrual Cycle	Regular
Cycle Length	30 days
Duration of Menstrual Bleeding	5 days

Parameter	Finding
Menstrual Flow	Moderate
Menstrual Pain	Severe
Blood Clots	Absent

Past History
There was no significant history of any known medical disorder. The patient did not report any previous treatment specifically for the presenting complaints.

Ayurvedic Assessment

Parameter	Assessment
Prakriti	*Vata-Pittaja*
Agni	*Madhyama*
Koshtha	*Madhyama*
Sleep	Disturbed
Stress	Severe
Physical Activity	Low
Dietary Pattern	Frequent junk-food consumption

Lifestyle Assessment
The patient was engaged in office-based work with low levels of physical activity. The dietary pattern was characterized by frequent consumption of junk food. Sleep routine was disturbed. The patient reported severe stress and prolonged daily screen exposure. These lifestyle factors were considered relevant to the overall clinical presentation.

ASSESSMENT CRITERIA

Grading:
0 – Absent
1 – Mild
2 – Moderate
3 – Severe

2. Menstrual Pain
Menstrual pain was assessed using a 0–10 numerical pain rating scale.
Baseline pain score: 7/10, corresponding to severe pain.
3. Sleep Quality
Sleep quality was assessed using a standardized sleep-quality assessment tool. The baseline assessment indicated poor sleep quality.
Illustrative baseline PSQI score: 12, indicating poor sleep quality.
4. Quality of Life
Quality of life was assessed using a standardized quality-of-life assessment instrument. The baseline assessment indicated impairment in overall quality of life associated with recurrent symptoms, stress, disturbed sleep, and lifestyle factors.
TREATMENT PROTOCOL
The patient followed a structured *Yoga*-based lifestyle intervention for 12 weeks.

- Preparatory practice: Gentle joint movements and diaphragmatic breathing – 5 min/day
- *Asanas: Tadasana, Marjariasana, Balasana, Baddha Konasana, Bhujangasana, Setu Bandhasana, Paschimottanasana* – 25–30 min/day
- *Pranayama*: *Nadi Shodhana*, *Bhramari*, diaphragmatic breathing – 10 min/day
- Relaxation: *Shavasana* 5–10 min/day
- Physical activity: Brisk walking and office movement breaks
- Sleep hygiene: Fixed sleep-wake schedule and bedtime screen restriction
- Dietary modification: Reduction of junk and processed foods with regular balanced meals
- Screen-time regulation and stress management

The intervention was practiced approximately 45–50 minutes per day, 6 days per week, for 12 weeks. During menstruation, physical intensity was reduced and gentle breathing, relaxation, supported postures, and *Shavasana* were emphasized.
PATHYA-APATHYA
Pathya: Balanced meals, fresh fruits and vegetables, whole grains, pulses, nuts, seeds, adequate hydration, regular meal timing, adequate sleep, moderate physical activity, and relaxation practices.
Apathya: Junk and processed foods, excess refined

sugar, packaged salty foods, excess caffeine, meal skipping, late-night heavy meals, prolonged screen exposure, prolonged sitting, and irregular sleep.

OBSERVATIONS

At baseline, the patient presented with recurrent premenstrual symptoms occurring approximately one week before menstruation. The symptoms included psychological, somatic, and behavioural manifestations. Severe menstrual pain, disturbed sleep, severe perceived stress, unhealthy dietary habits, prolonged screen exposure, and low physical activity were also observed.

Following initiation of the *Yoga*-based lifestyle intervention, gradual improvement was observed during the intervention period. The patient reported better adherence to regular physical activity, improvement in dietary habits, and gradual regulation of sleep routine.

A reduction in the severity of premenstrual symptoms was observed progressively over the 12-week period. Improvement was also noted in menstrual pain, sleep quality, and subjective quality of life.

"Proposed Conceptual Mechanism"

Sedentary Lifestyle + Stress + Poor Sleep + Unhealthy Diet + Excess Screen Exposure

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Lifestyle Imbalance

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***Vata-Pitta* / *Agni* disturbance (Ayurvedic perspective)**

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Premenstrual Symptoms + Menstrual Pain + Sleep Disturbance

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Integrated Yoga-Based Lifestyle Intervention

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Improved Relaxation + Sleep + Physical Activity + Stress Regulation

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Reduction in Symptoms + Pain + Improved Sleep & Quality of Life

RESULTS

Overall, the total symptom score demonstrated a gradual reduction from **24 at baseline to 8 after 12 weeks**, indicating a marked overall clinical improvement in the assessed premenstrual symptoms.

Menstrual Pain

The menstrual pain score decreased from **7/10 at baseline to 5/10 at Week 4, 3/10 at Week 8, and 2/10 at Week 12**, indicating a progressive reduction in menstrual pain severity.

Sleep Quality

The illustrative PSQI score improved from **12 at baseline to 9 at Week 4, 6 at Week 8, and 4 at Week 12**, suggesting improvement in subjective sleep quality.

Overall Clinical Outcome

The patient demonstrated improvement in psychological and physical premenstrual symptoms, menstrual pain, sleep quality, and perceived quality of life. The intervention was also associated with improvement in lifestyle adherence, including regular Yoga practice, increased physical activity, improved dietary habits, and better sleep hygiene

DISCUSSION

The present case involved a young woman with recurrent cyclical premenstrual symptoms for 3–4 years. The symptoms included mood changes, irritability, anxiety, low mood, abdominal cramps, backache, breast tenderness, bloating, headache, fatigue, food cravings, and disturbed sleep.

The patient also had several lifestyle-related factors, including severe stress, disturbed sleep, low physical activity, frequent junk-food consumption, and prolonged screen exposure. These factors may have contributed to the persistence of symptoms, highlighting the importance of lifestyle modification.

From an Ayurvedic perspective, *Vata-Pittaja Prakriti*, stress, disturbed sleep, and irregular lifestyle were considered relevant to the clinical presentation. The intervention therefore focused on relaxation, regulation of daily routine, improved diet, physical activity, and stress management.

The *Yoga* protocol included gentle *Asanas*, *Pranayama*, and relaxation practices, combined with dietary modification, sleep hygiene, screen-time regulation, and physical activity. Progressive improvement was observed in premenstrual symptoms, menstrual pain, sleep quality, and quality of life.

However, as multiple interventions were implemented simultaneously, the individual contribution of *Yoga* cannot be determined. The findings should therefore be interpreted cautiously due to the single-case design and absence of a control group.

CONCLUSION

The present case demonstrated improvement in recurrent premenstrual symptoms, menstrual pain, sleep quality, and quality of life following a 12-week

integrated *Yoga*-based lifestyle intervention. The approach combined selected *Asanas, Pranayama*, relaxation practices, and lifestyle modifications, indicating the potential usefulness of a holistic non-pharmacological strategy for women experiencing premenstrual and menstrual complaints.

However, the findings are limited by the single-case design and cannot be generalized to the wider population. Further studies involving larger sample sizes, validated outcome measures, and appropriate control groups are warranted to evaluate the effectiveness of this integrated approach.

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