

REVIEW ARTICLE

Benefits of Yoga in Women with Polycystic Ovarian Syndrome (PCOS)

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ABSTRACT

Introduction: One of the disorders related to hormonal imbalance affecting women is polycystic ovary syndrome (PCOS). It is due to the excessive release of hormones by the ovaries. PCOS has two characteristic conditions, which are hyperandrogenism and anovulation.

Methodology: The methodology adopted was an analysis of the reviews of literature to thematically understand the topic. Views and opinions about the benefits of yoga for women with PCOS were further done.

Results: PCOS was found in women at the percentage of 6–20. Yoga practice, meditation, and lifestyle modification were found to be beneficial. Changes in diet were found to have a positive impact on the patients with PCOS.

Discussion: Yoga practice was found to balance a person's mental, emotional, physical, and spiritual aspects. Regular practice of yoga was found to help reduce the effects of PCOS. The significance of yoga and meditation in the patients of PCOS reveals the usefulness of the practice. The positive impact of yoga and meditation drives the researcher to analyze the reviews about the effects of yoga and meditation on PCOS.

Conclusion: Yoga may be more durable and economical due to its holistic approach. Through physical and mental healing, yoga can help lessen the consequences of PCOS.

1. INTRODUCTION

The most prevalent endocrine condition in women is polycystic ovarian syndrome (PCOS), with frequency estimates ranging from 2.2% to 26%. The etiology of PCOS is thought to be influenced by both lifestyle factors and genetic pre-dispositions. It has also been demonstrated that stress and PCOS are related.^[1] The risk of type 2 diabetes is 10 times higher for adult women with PCOS, and the risk of the metabolic pattern is doubled. Research indicates that a stressful lifestyle coupled with habitual activation of sympathetic effort may cause dysregulation of the hypothalamus-pituitary-ovarian axis in PCOS-affected women.^[2] A literature review shows the work done by many researchers in the areas of polycystic ovarian syndrome and *yoga asana* practice. Carmina and Lobo (1999) reported that PCOS was the most common endocrinopathy associated with morbidity in women. Studies on polycystic ovarian syndrome in women found several pre-

disposing factors, such as genetic background and environmental factors such as endocrine disruptors and lifestyle, raise the incidence of PCOS. Women with PCOS experience long-term effects, particularly the onset of type 2 diabetes. Metabolic risk in PCOS: phenotype and adiposity impact.^[3] PCOS, or polycystic ovarian syndrome, is merely a syndrome rather than an actual illness. Numerous investigators have examined polycystic ovarian syndrome and discovered that there is no known cause; instead, sedentary lifestyles, hormone imbalances, and stress may all be contributing factors. There has been a sharp rise in the prevalence of polycystic ovarian syndrome among Indian women. Acne, weight gain, hirsutism, irregular or infrequent periods, and immature ovarian eggs that do not ovulate, and many ovarian cysts are some of the symptoms. It could lead to heart problems, diabetes, hypertension, infertility, and even cancer if left untreated. Yoga has proven effects in reducing and managing the symptoms of polycystic ovarian syndrome more effectively along with medicine. This review work has been designed to consider the available literature concerning the effectiveness of yoga in the management of polycystic ovarian syndrome.^[4]

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2. PCOS

PCOS is a hormonal problem that occurs during the reproductive years. If one has PCOS, periods may not come very often or periods could last several days and too much of a hormone called androgen in present in the body. With PCOS, there are many small fluid-like sacs on the outer edge of the ovary. These are called cysts. Small, fluid-filled cysts contain immature eggs. They are called follicles. The follicles fail to release eggs regularly. The exact cause of PCOS is unknown. Early diagnosis and treatment, along with weight loss, can reduce the risk of long-term complications such as type 2 diabetes and heart disease.^[5]

3. PROBABLE CAUSES OF PCOS^[6]

- Nutrition: Eating and drinking unhealthy foods and drinks, such as highly processed foods and beverages with added sugar, can cause weight gain, obesity, and other chronic conditions that increase a person's risk of developing at least 13 different types of cancer, including colorectal, endometrial, and breast cancer in postmenopausal women.
- Absence of exercise: Heart disease can result from insufficient physical exercise, even in those without any other risk factors. It may also raise the chance of having high blood pressure, high blood cholesterol, obesity, type 2 diabetes, and other heart disease risk factors.
- Being overweight: High rates of glucose intolerance due to abnormalities in β -cell and insulin action function are linked to PCOS. Since obesity significantly worsens congenital abnormalities, obese women of reproductive age have high rates of glucose intolerance. Being overweight is also caused due to obesity and insulin

4. SYMPTOMS OF PCOS^[7]

- Irregular periods. Having few menstrual periods or having periods that are not regular are common signs of PCOS.
- Too much androgen. Androgen hormone in excess causes more hair growth in the body. This is called hirsutism. Sometimes, severe acne and male-pattern baldness can happen. Too much weight gain, especially around the belly, could also happen.

4.1. Hormonal Levels in Women with PCOS

The following hormones may be elevated in women with PCOS: estrogen (which stimulates the growth of the endometrium in the womb), testosterone (an ovarian androgen hormone that influences hair growth), luteinizing hormone (LH, a pituitary hormone that influences hormone production by the ovaries and is important for normal ovulation), insulin (a hormone that is primarily involved in the utilization of energy from food), and anti-Mullerian hormone (which measures the fertility level of the ovaries).^[8]

5. YOGASANAS IN PCOS

Yogasana has a significant impact on PCOS management and prevention. Releasing stress can help alleviate PCOS symptoms since yoga operates at deeper and more intense levels than physical ones. Yoga poses, or asanas, that are tailored for PCOS. Yogasana alters glandular function to optimize the functioning of the endocrine system and regulate hormone discharges. Yoga poses naturally regulate PCOS by bringing the body, mind, and emotions into balance.^[9] Yoga poses help people live healthier lives by improving their body awareness and

self-care. Yogasana offers relaxation and serenity, which opens the door to relieving the excruciating symptoms of PCOS.

Yogasanas that are important in PCOS are *Surya Namaskara*, *Baddha Konasana*, *Bhujangasana*, *Naukasana*, *Dhanurasana*, *Balasana*, *Padmasana*, and *Paschimottanasana*.^[10]

6. RESULTS

6.1. Research Studies on the Beneficial Effects of Yoga on the Patients of PCOS

- Yogic practices are known to lower sympathetic tone and stress levels since they are a type of comprehensive mind-body healing. In a recent randomized controlled trial, the researchers (year) discovered that a 12-week comprehensive yoga program dramatically reduced levels of anti-Mullerian hormone, LH, and testosterone compared to physical activity (Jia *et al.*, 2021; Patil *et al.*, 2023).
- PCOS patients' improved menstrual frequencies and hirsutism are measured using the Modified Ferriman and Gallway score. In addition to treating PCOS symptoms, yoga may also avert long-term consequences such as diabetes and cardiovascular disease (Aswini and Jayapalan, 2017).
- Some of the *yogasanas* helpful for PCOS are as follows:^[11] *Malasana*, *Dhanurasana*, *Supta Baddha Konasana*, *Bhujangasana*, *Surya Namaskar*, *Balasana*, *Kapalbhati Pranayama*, *Setu Bandhasana*, and *Naukasana*.

7. DISCUSSION

Given the benefits of yoga and meditation on PCOS, hormone balance is seen by the regular practice of yoga asanas. It helps to maintain hormonal balance by raising endorphins and lowering insulin and estrogen hormones.^[12] It also boosts the mood of individuals with PCOS. It has been found that PCOS patients are more prone to depression because of hormone abnormalities and symptoms. Regular exercise releases feel-good hormones called endorphins. Yoga practice and meditation were found to support weight loss along with a nutritious diet. It also helped in increasing the quality of sleep. PCOS patients often experience snoring, sleep apnea, and obesity. It lowers the risk of diabetes. The asanas practice helps in assisting with the management of diabetes.^[13] It also assisted with cholesterol management. Women who had PCOS had increased cholesterol, and the yoga practice helped to lower it. PCOS patients usually have high blood pressure and cardiovascular disease. Regular practice helps to reduce the risk of cardiovascular diseases. The practice of yoga can bring harmony to the functioning of the systems of the body and can help in the normal regulation of blood pressure.

8. CONCLUSION

Polycystic ovarian syndrome (PCOS) affects women and is linked to enlarged polycystic ovaries and is characterized by amenorrhea, obesity, and hirsutism in females. Menstrual irregularities, obesity, anxiety, sadness, and stress are among the warning signs and symptoms that might lower one's quality of life. Through physical and mental healing, yoga can help lessen the consequences of PCOS. Yoga may be more durable and economical due to its holistic approach. For this reason, yoga might be suggested as a primary intervention or as a supplement to regular medical care. The present paper provides insights into reaping the benefits of the practice of yoga among women with PCOS to help them in their recovery.

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10. AUTHORS' CONTRIBUTIONS

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12. ETHICAL APPROVALS

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13. CONFLICTS OF INTEREST

Nil.

14. DATA AVAILABILITY

This is an original manuscript, and all data are available for only review purposes from the principal investigators.

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