

Therapeutic Role of Yoga in Poly Cystic Ovarian Syndrome (Pcos) – A Review

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Abstract

Polycystic ovary syndrome (PCOS) is a common, multiplex endocrine, metabolic and reproductive disorder affecting up to 17.8% of reproductive-aged women. Aim is to describe the role of various *yoga* implementations in the management of PCOS. Data of *yoga* and affiliated compositions of PCOS were collected from *Siddha* texts, journals and articles. Causes of PCOS are unknown or heterogeneous in nature. Insulin resistance, hormonal imbalance, genetic factors, bisphenyl A (BPA), stress and other psychological factors and the sedentary way of living, dietary dissimilarity, poor exercise or intensive physical exercise have linked as an etiological factor. Current randomized controlled trial revealed holistic *yoga* program to be significantly better than physical exercise in reducing anti-mullerian hormone, luteinizing hormone and testosterone, modified ferriman and gallway (mFG) score for hirsutism and regulating menstrual frequencies in PCOS patients. *Yoga* interventions referred to in traditional literature are chief key which keeps the individual healthy and adjusts functions of endocrine system. *Pranayam* (Breathing techniques) helps a lot in relieving the symptoms of PCOS related to deep rooted mental stress and keep the individual high to fight with this embitter syndrome. Literature reveals that, the therapeutic role of *yoga* is effective in patients of PCOS.

Key words

PCOS, *Yoga*, Insulin resistance

Introduction

Polycystic ovary syndrome (PCOS) is a common, complex endocrine, metabolic and reproductive disorder causing a strong emotion up to 17.8% of reproductive aged women. Extent of prevalence range from 2.2% to as high as 26%, turn on the diagnostic criteria used and the ethnicity of the population under study. A contemporary survey found 9.13% prevalence in south Indian adolescent girls ⁽¹⁾. PCOS is a multiplex disorder that can be managed but not for all time cured. Each woman has her own PCOS symptoms and its own root causes ⁽²⁾.

Adapted way of living that contains giant calorie diet and uncommonness of exercise resulting in obesity and insulin resistance which has been well identified as an increasing the severity factor for PCOS. Alliance between stress and PCOS has also been recorded. Adult women with PCOS have a 10-fold got bigger risk of developing type 2 diabetes, and a 2-fold got bigger risk of the metabolic syndrome. There are researches recommending that long standing stimulation of sympathetic activity, an outcome of tough way of living, can induce impairment in the regulation of the Hypothalamus Pituitary-Ovarian axis (HPO axis) in women with PCOS ⁽³⁾.

Yogic life style, an aspect of holistic mind-body medicine, is familiar to lessen stress and sympathetic tone ⁽⁴⁾. As stated by *Siddha* medicine, *Yogasanam* make reference to physical postures, doing exercise by bending, extending and flexion of the body which strengthen the physical and psychological well-being. Every single *Asana* hold dissimilar benefits. *Asanam* point out loosening of spirit from the compact domination with worldly life. *Asanam* is considered as an outstanding code of spiritual regulation. The postures in which a person can sit for a long time with steadiness and comfort is called *Asanam*. These physical postures help in the promotion of positive health and cure of effects in different organs. They also exercise considerable impact in the functioning of endocrine glands are disturbed due to both physical and psychic factors. Certain physical postures help in regular functioning of these glands and thus the ailments caused by the disturbance in their functioning are overcome. The *Kundalinishakthi* which lies dormant in every individual in the region of coccyx gets awakened through *Yogasanam*. This power passes through six *chakras* or centers of energy to the centers of energy brain. Awakening of powers in any of six *chakras* helps in the maintenance of positive health of the individual cure of many obstinate diseases ^{(6), (7)}.

Recent randomized controlled experiment discovered holistic yoga program for 12 weeks to be significantly more desirable than physical exercise in minimizing Anti-Mullerian Hormone, Luteinizing Hormone and Testosterone, Modified Ferriman and Gallway (mFG) outcome for

hirsutism and improving menstrual frequencies in PCOS patients. Yoga not only marks the problems of PCOS but is possible to put a stop to the long period issues such as Cardio-vascular diseases, diabetes ^{(5), (6)} etc. Further, yoga, being holistic in its approach, is possibly more cost-effective and lasting over a period of time. Hence yoga may be suggested as good as both a primary intervention and/or as supplement to quality medical care for management of PCOS.

Objective

To describe the role of several yoga implementations in the management of poly cystic ovarian syndrome(PCOS).

Methodology

In this review, data of *yoga* and related literature of PCOS were collected from *Siddha* texts. Also the data were collected from journals and articles as claimed by modern science. Analyzed the data concerning concepts of yoga practices lead the way to healthier and resilient life opposed PCOS.

Literature

Traditional aspect of PCOS

Poly cystic Ovarian Syndrome to have an equal action of the *Dosha, Dhātu* and *Upadhātu*. It does not correspond the state to a one disease or syndrome but the symptoms bear a resemblance to the terminologies defined as *Anartava* (Amenorrhoea), *Yonivyapad* (anatomical and physiological disorders of the reproductive system)like – *Arajaska* (Oligomenorrhoea due to vitiation of *Vatadosha*), *Lohitakshaya* (Oligomenorrhoea due to vitiation of *VataPittadoshas*), *Shushka* (dryness of vagina), *Shandhi* (reproductive disorder of genetic origin), *Vandhya*(infertile), *PushpaghniRevati*(Idiosyncratic an ovulatory menstruation), *A beejata* (anovulation), *Rajodushti* and *Ashtartavadushti* (menstrual flow disorder due to vitiation of *Doshas*) etc. The terms *Raja* and *Artava* have been used synonymously or in other respect in the authoritative. Generally, *Raja* is considered as the *Upadhātu* of *Raktadhātu*. Whereas *Artava* as the *Saptamdhatu* itself. Similarly, their *srotas* (channels) are also two completely dissimilar entities. In the present paper, *Raja* has been considered as the menstrual flow while *Artava* is characteristic of the ovum ⁽¹⁹⁾.

Siddha aspect of PCOS

As per the text of Pararasasekeram, *Garparogam* is classified into 9 types. *Garpavaayu* is one among them. The symptoms of *Garpavaayu* are abdominal discomfort, dysmenorrhoea, low backache, constipation, amenorrhoea, and heaviness of thigh. It may be correlated with Poly Cystic Ovarian Syndrome of modern science of medicine. The classical Siddha literature

Pararasasekaram cites that any imbalance in three humors may inhibit the release of ovum from the ovaries. This may be related to infertility due to ovulatory factors ⁽²⁴⁾.

Benefits of *Yoga*

Yoga is a psycho-somatic spiritual regulation for attaining union and consonance between our mind, body and soul by practicing particular skills such as *Asanas* (*Yoga* postures), *Pranayam* (Breathing techniques) and *Dhyana* (Meditation) to attain highest level of consciousness. Documented scientific evidences strongly indicate that *yoga* has preventive as well as curative potential. Being a safe therapeutic modality, it can be used as an effective lifestyle adjunct to medical treatment to improve the quality of life in PCOS subjects.

Table 1: Some *yoga* practices beneficial for the management of PCOD

S.N	Yoga technique	Effects
01	<i>ShuddhiKriya</i> (Cleansing practices) Frontal brain purification <i>:Kabalabhati</i>	Abdominal pressure generated in the course of breathing out upgrades the efficiency of β -cells of the pancreas assist in the production of insulin and controlling glucose levels in the blood ⁽⁸⁾ .
02	Preparatory practices/warming up <i>Surya namaskaram</i>	Vitalizing insulin production along brain signaling ⁽⁹⁾ outstandingly reduces hip circumference, bring to bear advantageous results on glycemic outcomes ⁽¹⁰⁾ . This pose speeds up weight loss if carry out at a fast pace while a few slow rounds daily assist relaxation. It encourages sleep, calms anxiety and upgrade memory. It also makes stronger the abdominal muscles ⁽¹⁷⁾ .
03	<i>Asanas</i> :Yoga postures	Revive of pancreatic cells through the changing abdominal contractions and relaxations involved in <i>yoga</i> practice enhance blood supply to muscles, Enhances insulin receptor expression in the muscles, causing increased glucose utilize by muscles ⁽¹¹⁾ .

i	<i>Sarvangasana</i>	It is useful for the reproductive system as it increases blood circulation to the pelvic region thus increasing the productivity of the reproductive organs. It builds up the uterine ligaments and makes better the functioning of the ovaries. It also assists to keep a balanced mood and calms the mind ⁽¹⁷⁾ .
ii	<i>Ardhamatsyendrasana</i>	This pose stretches and tones the abdominal muscles and stimulates the abdominal organs and also alleviates stress and irritation ⁽¹⁷⁾ .
Iii	<i>Bharadvajasana</i>	This posture strengthens the muscles and organs of the lumbar region ⁽¹⁸⁾ .
Iv	<i>Prasaritapadottanasana</i>	This posture flexes the lumbar and pelvic muscles and improves energy and blood circulation to the ovaries. Apart from strengthening and stretching the spine it tones the abdominal muscles. It also eliminates exhaustion and combats mild depression ⁽¹⁸⁾ .
v	<i>Baddhakonasana</i>	This posture improves flexibility and stimulates the reproductive and digestive organs. It is a great stretch for relieving stress and tiredness. Regular practice of this posture is beneficial to the kidneys, bladder, prostate gland, and ovaries ⁽¹⁸⁾ .
vi	<i>Suptabaddhakonasana</i>	This pose stimulates abdominal organs like the ovaries, bladder and kidneys as well as the heart and thus improves general circulation. It relieves the symptoms of stress, mild depression, menstruation and menopause ⁽¹⁸⁾ .
Vii	<i>Ushtrasana</i>	This asana stimulates the abdominal organs. <i>Vata, Pitta and Kaphadoshshamak</i> , stimulates

		the thyroid gland and reduces the abdominal fat. It also improves digestion ⁽¹⁷⁾ .
viii	<i>Padmasana</i>	This pose stimulates the spine, pelvis, abdomen and bladder and even eases menstrual discomfort. It also has a calming effect on the brain ⁽¹⁸⁾ .
Ix	<i>ArdhaBaddha Padma Pashimottanasana</i>	The pose massages the liver, kidneys, pancreas, uterus and reproductive organs. It tones the uterine muscles and is very useful in preventing dysmenorrhea if practiced regularly. Similarly, consistent practice also helps to reduce the abdominal fat ⁽¹⁷⁾ .
04	<i>Pranayama : Regulated breathing practices</i>	
	<i>Bhramari pranayama</i>	Soothing and calming effect on the mind, improves mental and physical health ⁽¹²⁾ .
	<i>Surya bhedana pranayama</i>	Sympathetic stimulating effect; may be recommended in people with diabetes ⁽¹³⁾ .
	<i>Nadishodana pranayama</i>	Augment cerebral blood flow and oxygenation, improving neuronal activities in the brain centers, including those present in the limbic areas, hypothalamus, and medulla, and improve sympathetic vagal outflow ⁽¹⁴⁾ .
05	<i>Mudras: Hand gestures</i>	Calm down the mind and helps to achieve greater inner peace.
	<i>Yoni mudra</i>	Balances the activities of right and left hemispheres of the brain. A good tool for dealing with various mind related problems like anxiety, stress, anger, depression. Promote deep relaxation and eliminate stress Boost metabolic rates, promote weight loss, and reduce sugar levels ⁽¹⁵⁾
06	<i>Yoga nidra :Yogic relaxation</i>	Improved symptom score, reduction of fasting

		blood glucose and postprandial blood glucose levels ⁽¹⁶⁾ .
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Discussion

PCOS a metabolic malady mother of all life style disorders has also appeared as extensive public health challenge, it is the most usual endocrinopathy affecting mainly the women of child bearing age and teenage girls ⁽²⁰⁾. A research study conducted by R.V. Bharti has reported that prevalence of PCOS in rural population is not so much as compare to urban areas ⁽²¹⁾. The exact cause of PCOS is unknown or heterogeneous in nature. However, it has certainly been linked to a variety of etiological factors. There is insulin resistance, hormonal imbalance, genetic factors, bisphenyl A (BPA), Stress and other psychological factors and the sedentary lifestyle, dietary variations, lack of exercise or exhaustive physical exercise have also been contributory factors as also extreme weight loss, disorders of the endocrine system and various disorders of the ovaries ⁽²²⁾.

Mental repose is the essential in PCOS. *Asanas*(*Yoga* postures), *Pranayam*(breathing exercises), along with definite soothing meditation helps to detoxify and de-stress the system. *Yoga* helps to open up the pelvis and encourage relaxation while *Pranayam* is a strong technique that calms the mind. Researches conducted have opened up that a holistic *yoga* program exhibited significant outcome as differentiated to the conventional physical exercises followed by two random, controlled groups for a duration of one hour per day for 12 weeks in the following parameters. Advancement in glucose, lipid and insulin and insulin resistance values, Reduction in symptoms of anxiety, Reduction of Anti-Müllerian hormone (AMH), Luteinizing hormone (LH), Testosterone, modified Ferriman and Gallwey score (mFG) for hirsutism and an improvement in menstrual frequency ⁽²³⁾. Weight loss is the most important bit of treatment as it makes right the hormonal imbalance, elevates the insulin and sex hormone-binding globulin levels and reduces the testosterone levels. Several *yoga* stance support in weight loss, get rid of stress and improve the ovarian blood supply thereby assisting treatment of PCOS. *Yoga* postures which open and stretch the lumbar and pelvic region and induce the thyroid, pituitary and hypothalamic glands are all important.

Conclusion

Polycystic Ovarian Syndrome (PCOS) is commonest health issue in women of reproductive age produced by hormonal variance due to harmful habits, restless and stressful way of living. Women diagnosed with PCOS have intense insulin resistance, obesity and larger level of androgens. Weight depletion is chief preventive and therapeutic possible to combat with this ruination which can

be attained by incorporating lifestyle modifications. Traditional dietary regime the *Pathyam* (health-giving food) and *Yoga* involvement referred to in traditional literature are important key which keeps individual healthy and manages functions of endocrine system. *Pranayam* (Breathing techniques) assists a lot in relieving the symptoms of PCOS connected to intense rooted mental stress and remain the individual high to defend with this frustrate syndrome. According to literature collections, therapeutic role of specific *yoga* practices is effective in patients of PCOS.

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