https://doi-ds.org/doilink/02.2026-93692368/GIJNR
Glorious International Journal of Nursing Research
(An International Peer-Reviewed Refereed Journal)
ISSN: 2583-9713 www.gloriousjournal.com

THE MULTIFACETED BURDEN OF PCOD: FROM REPRODUCTIVE DYSFUNCTION TO CARDIOMETABOLIC RISK IN ADOLESCENTS AND YOUNG WOMEN

Gamit Mahimakumari

1. Gamit Mahimakumari, Nursing tutor, Department of OBG, College of nursing, Zydus Hospitals & Healthcare Research Pvt. Ltd, Anand.

Corresponding Author: Gamit Mahimakumari
E-mail- gamitmahima2508@gmail.com

Article Information:

Type of Article: *Original Article* ***Received On:*** *22.01.2026*

Accepted On: *01.02.2026* ***Published On****: 09.02.2026*

Abstract

INTRODUCTION:

A number of illnesses are gender-specific. Gynecological issues involve the disability in reproductive or the estrogen-controlled organs in the females. While a few of these feminine problems are curable, some may be chronic, or even fatal. Many of these disorders interfere with fertility. With the upsurge in the invasion of, and exposure to chemicals or synthetics, which are to large extent endocrine disruptors, the instances of hormonal disturbances in females are on a sharp rise. One of these commonly encountered reproductive and hormonal irregularities includes POLYCYSTIC OVARY SYNDROME.[1] Polycystic ovarian syndrome (PCOS) is the most common endocrine pathology in females of reproductive age worldwide. Stein and Leventhal initially described the problem in 1935. The prevalence ranges between 5% and 26%. It is an enigmatic condition that, while extremely common, creates challenges in its diagnosis and management, as leading symptoms may vary with age, and treatment may be tailored to specific requirements of individual need.[2] The disease is multifactorial and complex and, therefore, often difficult to diagnose due to overlapping symptoms. Multiple etiological factors have been implicated in PCOS. Due to the complex pathophysiology involving multiple

https://doi-ds.org/doilink/02.2026-93692368/GIJNR
Glorious International Journal of Nursing Research
(An International Peer-Reviewed Refereed Journal)
ISSN: 2583-9713 www.gloriousjournal.com

pathways and proteins, single genetic diagnostic tests cannot be determined.[3]

PREVELENCE

Polycystic ovary syndrome is a disease that affects many women of childbearing age. The prevalence of PCOS varies depending on the age range of the population, ethnicity and the type of diagnostic criteria adopted. More and more studies show that this is not only a problem affecting young women, but it can have its beginnings in teenage years. In a population study of Korean women, the age-adjusted incidence of PCOS was found to be 2.8%, increasing in late teens, peaking at age 20 and beginning to decline at age 30 [4]. In a study of South Indian girls, the prevalence of PCOS was 6.8%. Most of the study participants diagnosed with PCOS had no prior knowledge of their disease (78.4%), while 6.8% had already been treated for PCOS. Polycystic ovary syndrome awareness was higher among young women (84.9%) compared to adolescent girls (4.5%). Lack of information and publicity (63%) was considered the most important reason for the low level of awareness, which emphasizes the need for proper health education, as well as the implementation of programs to raise awareness and discuss the issues of PCOS among teenagers.[5]

A cross-sectional study of a population in India found a significant increase in irregular menstrual cycles in young girls during the second wave of COVID-19. In the study group, 11% of girls were diagnosed with PCOS. Insomnia, stress and depression were indicated as risk factors for irregular menstruation, and the importance of improving the lifestyle of young girls, which significantly affects their reproductive health, was emphasized. Despite the high prevalence of PCOS among women of reproductive age, we still do not know the exact etiology of this disease. Work is constantly underway to bring us closer to understanding the pathophysiology of PCOS, but it is certain that the formation of this syndrome has a multifactorial background.[6]

ETIOLOGY/CAUSE:

The exact reason for PCOS is dark; it is gotten on to be a multi factorial condition with a genetic part. Around 20–40% of first-degree female relatives of women with PCOS proceed to make PCOS themselves, contrasted with evaluated 4– 6% prevalence inside the normal people. The

https://doi-ds.org/doilink/02.2026-93692368/GIJNR
Glorious International Journal of Nursing Research
(An International Peer-Reviewed Refereed Journal)
ISSN: 2583-9713 www.gloriousjournal.com

fundamental driver of PCOS: Increased androgen level, Life style, Environments, Increased insulin, Increased estrogen, Genetic inclination, Weakened resistant framework, Irregular periods, Evaluation and Diagnosis, Hormonal disturbances, Dirty nourishment, Inflammation.[7]

COMMON SIGN AND SYMPTOMS

Polycystic ovary syndrome (PCOS) affects approximately 40% of adolescent and young adult women, significantly disrupting metabolic, reproductive, and psychological health. Extensive research has identified a range of clinical manifestations associated with the condition, including oligomenorrhea or amenorrhea, infertility, obesity, and the presence of ovarian cysts (typically measuring 8–10 mm in diameter). Additional common features comprise central adiposity, acne, alopecia, hirsutism, and, in some cases, vocal changes. The normal menstrual cycle is regulated by a precise interplay of gonadotropin-releasing hormone (GnRH), luteinizing hormone (LH), and follicle-stimulating hormone (FSH). In PCOS, aberrant pulsatile secretion of GnRH disrupts this axis, leading to elevated androgen and prolactinlevels, impaired follicular development, and consequent anovulation. A hallmark of the syndrome is hyperandrogenism, clinically and biochemically evident through elevated testosterone concentrations. This hormonal dysregulation contributes to a spectrum of complications—such as sleep apnea, mood disturbances, and cyst formation—that collectively impair ovulation and define the PCOS phenotype.[8]

Consequently, its systemic impact, especially on neurological and cognitive health remains underexplored. In recent years, however, increasing attention has been given to the cognitive dimension of PCOS. A considerable number of women with PCOS report difficulties in memory, attention, decision making and overall mental clarity. These complaints are commonly described as “brain fog.” Though subjective such reports have been consistent across diverse populations. Unfortunately, due to their subtle presentation and lack of specific screening protocols, these symptoms are often overlooked in clinical practice. Several biological mechanisms offer plausible explanations for the relationship between PCOS and cognitive dysfunction. Hormonal Imbalances: Elevated androgens have been associated with impaired verbal fluency and executive function. Insulin Resistance: Compromised glucose metabolism may directly affect hippocampal activity, influencing memory. Chronic Low Grade

https://doi-ds.org/doilink/02.2026-93692368/GIJNR
Glorious International Journal of Nursing Research
(An International Peer-Reviewed Refereed Journal)
ISSN: 2583-9713 www.gloriousjournal.com

Inflammation: Pro inflammatory cytokines such as IL-6 and TNF-α may contribute to neuroinflammation, altering brain efficiency. HPA Axis Dysregulation and Sleep Disturbances: Both are linked to impaired concentration and attentional control.[9]

MANAGEMENT

The current medical management of PCOS primarily relies on pharmacological interventions aimed at alleviating specific symptoms rather than addressing the root causes of the disorder.[10] Common treatments include oral contraceptive pills for regulating menstrual cycles, anti-androgen medications for reducing hirsutism and acne, and insulin sensitizers such as metformin to improve metabolic function. However, these pharmacological approaches often come with side effects and are not universally effective in managing all aspects of the condition.[11] Moreover, the chronic nature of PCOS necessitates longterm adherence to lifestyle modifications, including dietary changes and regular physical activity.[12] In recent years, increasing attention has been given to complementary and integrative therapies for PCOS management.[13-14] Among these, yoga has emerged as a promising non-pharmacological intervention due to its holistic benefits for both physical and mental well-being. Yoga, an ancient practice that integrates physical postures (asanas), breathing techniques (pranayama), and meditation (dhyana), has been traditionally known to enhance hormonal balance, regulate metabolic processes, and promote psychological resilience.[15] Several studies suggest that yoga can significantly reduce stress-related hormonal imbalances by modulating the hypothalamic-pituitary-adrenal (HPA) axis, improving insulin sensitivity, and enhancing ovarian function.[16,17] In addition, yoga is known to alleviate chronic inflammation and oxidative stress – two key factors implicated in the pathogenesis of PCOS.[18] Regular practice has been shown to reduce testosterone levels, improve menstrual cyclicity, enhance glucose metabolism, and lower markers of anxiety and depression.[19] However, despite these promising findings, further empirical research is needed to systematically assess the role of yoga as a therapeutic modality for PCOS patients.[20]

CHALLENGES IN PCOS TREATMENT

1. High cost of treatment

https://doi-ds.org/doilink/02.2026-93692368/GIJNR
Glorious International Journal of Nursing Research
(An International Peer-Reviewed Refereed Journal)
ISSN: 2583-9713 www.gloriousjournal.com

PCOS management often involves a combination of pharmacological and non-pharmacological approaches for several years. Medications like oral contraceptives, metformin, and clomiphene citrate are frequently prescribed in tandem. Long term complications of PCOS also require muti disciplinary specialised care, these services are expensive and often unavailable in low-income settings.[21]

2. Fragmented healthcare systems

The treatment of PCOS requires a team of gynaecologists, endocrinologists, dietitians, and mental health professionals work together, but many a case, these are not available in rural as well as in other low resource settings, the specialists if present tend to work on only one aspect of the syndrome and do not take sufficient care to council with rest of the other specialists to provide comprehensive care.[22]

3. Mental health challenges

Anxiety, depression, and body image issues are prevalent among women with PCOS, with studies indicating significantly higher rates compared to the general population. Despite this, mental health is rarely addressed in PCOS treatment plans, particularly in low-resource settings where psychological services are either unavailable or stigmatized.[23]

4. Low adherence to lifestyle changes

Lifestyle modification is a cornerstone of PCOS management, yet adherence remains low due to socioeconomic barriers, lack of support, and cultural factors. For instance, women in rural areas may not have access to safe spaces for physical activity or affordable, nutritious food. Additionally, the absence of structured lifestyle intervention programs in low-resource settings further limits their effectiveness.[24]

EDUCATION AND COUNSELING

Education and counseling about the condition are extremely important. The explanation and discussion of PCOS should be culturally sensitive, comprehensive, and tailored to the individual. This communication should foster an empathetic approach, encourage self-care, and highlight available peer support groups, which operate in many countries. Integrating healthy lifestyle interventions into the management of adolescents with PCOS is essential,

https://doi-ds.org/doilink/02.2026-93692368/GIJNR
Glorious International Journal of Nursing Research
(An International Peer-Reviewed Refereed Journal)
ISSN: 2583-9713 www.gloriousjournal.com

as a significant proportion are overweight, obese, or at high risk of excessive weight gain.These lifestyle interventions encompass multiple components, such as increased physical activity, balanced nutrition, reduced sedentary behavior, and behavioral strategies. Adherence to such interventions can be enhanced by addressing psychological factors—including disordered eating, anxiety, and body image concerns—all of which are common among adolescents. Lifestyle modifications in women with PCOS have been shown to improve quality of life.

SUMMARY

Polycystic ovary syndrome (PCOS) is a prevalent condition increasingly affecting adolescents and young women worldwide. It significantly impairs mental and reproductive health, diminishes quality of life, and necessitates multidisciplinary care due to its associated multimorbidity and complications. Early diagnosis during adolescence is critical to intervene in its metabolic progression and prevent long-term health issues in adulthood. The exact etiology of PCOS remains elusive but is recognized as complex and multifactorial, involving genetic, environmental, and lifestyle influences. Emerging evidence suggests its origins may even begin prenatally. Ongoing research aims to identify precise predisposing factors and underlying causes. Diagnosing PCOS in adolescents remains debated, highlighting the need for age-appropriate criteria. Studies refining diagnostic thresholds and characterizing large patient cohorts are essential to provide clarity and answer unresolved questions. Ultimately, understanding and managing PCOS in young populations remains a significant challenge for both clinicians and researchers.

Menstrual health and diseases such as PCOS are important public health concerns in India, yet they are frequently not well studied or treated. Limited conversation and understanding of menstrual health concerns are partly caused by cultural stigmas and a lack of knowledge about the topic. Research indicates that major emotional and psychological problems associated with PCOS and the menstrual cycle affect Indian women, and these problems are frequently made worse by social pressure and a lack of proper medical care.

REREFENCE

1. Patel, S. (2018). Polycystic ovary syndrome (PCOS), an inflammatory, systemic, lifestyle endocrinopathy. The Journal of steroid biochemistry and molecular biology, 182, 27-36.
2. Bozdag G, Mumusoglu S, Zengin D, Karabulut E, Yildiz BO. The prevalence and phenotypic features of polycystic ovary syndrome: a systematic review and meta-analysis. Hum Reprod. 2016 Dec;31(12):2841-2855.
3. Hoeger KM, Dokras A, Piltonen T. Update on PCOS: consequences, challenges, and guiding treatment. The Journal of Clinical Endocrinology & Metabolism. 2021 Mar 1;106(3):e1071-83.
4. Abeen A, Yamini V, Rahman Amberina A, Anitha S, Vijayalakshmi B. Polycystic ovarian syndrome: prevalence, predisposing factors, and awareness among adolescent and young girls of South India. Cureus. 2022 Aug 12;14(8):e27943. doi: 10.7759/cureus.27943. PMID: 36120234; PMCID: PMC9469313.
5. Pasquali R, Stener-Victorin E, Yildiz BO, Duleba AJ, Hoeger K, Mason H, Homburg R, Hickey T, Franks S, Tapanainen JS, Balen A. PCOS Forum: research in polycystic ovary syndrome today and tomorrow. Clinical endocrinology. 2011 Apr;74(4):424-33.
6. Bhardwaj P, Yadav SK, Taneja J. Magnitude and associated factors of menstrual irregularity among young girls: A cross-sectional study during COVID-19 second wave in India. J Family Med Prim Care. 2022; 11(12): 7769–7775, doi: 10.4103/jfmpc.jfmpc_1201_22, indexed in Pubmed: 36994040.
7. Hridyanshi, R. K. Patil, Lovish Kansal. Polycystic Ovary Syndrome: A Review. ISSN:2456-6470, Volume-5/ issue-4, June 2021, pp 113-117.
8. Naeem I, Zehra A, Rehman F, Hussain A, Hussain A, Hussain N, Waseem M, Alqahtani RM, Shamlan G, Ahmed IA, Manzoor MF. Polycystic ovarian syndrome a risk factor for non-communicable diseases: insights into recent research and prevention approaches. Journal of Ovarian Research. 2025 Dec;18(1):1-5.
9. Bhagat D. Association between polycystic ovary syndrome (PCOS) and Cognitive Dysfunction: A Narrative Review.
10. Cowan S, Lim S, Alycia C, Pirotta S, Thomson R, Gibson-Helm M, Blackmore R, Naderpoor N, Bennett C, Ee C, Rao V, Mousa A, Alesi S, Moran L. Lifestyle management in polycystic ovary syndrome-beyond diet and physical activity. BMC Endocr Disord.

2023;23(1):14. doi: 10.1186/s12902-022-01208-y 10.

11. Awwad O, Saleh M, Bardaweel S, Alsamydai A, Afifi FU, Akour A, Tarboosh RA, Hamdan M, Sa'd Basha A. Use of complementary and alternative medicine among females with polycystic ovary syndrome in Jordan: A cross-sectional study. BMJ Open. 2024;14(12):e088945. doi: 10.1136/bmjopen-2024-088945
12. Balkrishna A, Rana M, Mishra S, Srivastava D, Bhardwaj R, Singh S, Rajput SK, Arya V. Incredible combination of lifestyle modification and herbal remedies for polycystic ovarian syndrome management. Evid Based Complement Altern Med. 2023;2023(1):3705508. doi: 10.1155/2023/3705508.
13. Raja-Khan N, Stener-Victorin E, Wu X, Legro RS. The physiological basis of complementary and alternative medicines for polycystic ovary syndrome. Am J Physiol Endocrinol Metab. 2011;301(1):E1-10. doi: 10.1152/ajpendo.00667.2010
14. Chen Q. Neurobiological and anti-aging benefits of yoga: A comprehensive review of recent advances in non-pharmacological therapy. Exp Gerontol. 2024;196:112550. doi: 10.1016/j. exger.2024.112550 14. Rao S, Pal R. Exploring the multidimensional health effects of Yogasana: A comprehensive overview. In: Yoga-Exploring the Health Benefits and Diverse Dimensions. London: InTech Open; 2024. doi:10.5772/intechopen.1005096
15. Mahajan A. Role of yoga in hormonal homeostasis. Int J Clin Exp Physiol. 2014;1(3):173. doi: 10.4103/2348-8093.143474
16. Padmavathi R, Kumar AP, Dhamodhini KS, Venugopal V, Silambanan S, Maheshkumar K, Shah P. Role of yoga in stress management and implications in major depression disorder. JAyurveda Integr Med. 2023;14(5):100767. doi: 10.1016/j.jaim.2023.100767
17. Mishra S, Patel G, Tiwari M. Polycystic ovarian syndrome and their management through yoga therapy: A narrative review. AYUHOM. 2023;10(2):83-89. doi: 10.4103/AYUHOM.AYUHOM_46_23
18. Bhattacharya K, Dey R, Sen D, Paul N, Basak AK, Purkait MP, Shukla N, Chaudhuri GR, Bhattacharya A, Maiti R, Adhikary K, Chatterjee P, Karak P, Syamal AK. Polycystic ovary syndrome and its management: In view of oxidative stress. Biomol Concepts. 2024;15(1):20220038. doi: 10.1515/bmc-2022-0038
19. Rohr UD. The impact of testosterone imbalance on depression and women's health.

Maturitas. 2002;41:25-46. doi: 10.1016/s0378- 5122(02)00013-0

20. Rao V, Pena A, James A, Phadke A, Grover J, Blendis E, Choudhary N, Kampegowda P. The role of meditation and mindfulness in the management of polycystic ovary syndrome: A scoping review. Front Endocrinol (Lausanne). 2024;15:1295705. doi: 10.3389/ fendo.2024.1295705.
21. Gautam R, Jyoti A, Bhateja A, Malhotra N, Arora T. Pharmacological management of PCOS: trends and insights from a 10-year bibliometric analysis. Expert Opin Pharmacother. (2025) 26(11–12):1351–8. doi: 10.1080/14656566.2025.2535175
22. Shukla A, Ashraf GM, Sudharsan V, Arora T, Rather KUI, Chowdhury S, et al. Trends of age at onset of menarche among Indian women of reproductive age and its association with the presence of PCOS and related features: a multicentric cross sectional study. J Obstet Gynecol India. (2025) 75(1):70–7. doi: 10.1007/s13224-024-01994-6
23. Rosenfield RL, Ehrmann DA. The pathogenesis of polycystic ovary syndrome (PCOS): the hypothesis of PCOS as functional ovarian hyperandrogenism revisited. Endocr Rev. (2016) 37(5):467–520. doi: 10.1210/er.2015-1104
24. Cowan S, Lim S, Alycia C, Pirotta S, Thomson R, Helm MG, et al. Lifestyle management in polycystic ovary syndrome—beyond diet and physical activity. BMC Endocr Disord. (2023) 23:1–33. doi: 10.1186/s12902-022-01208-y