

Original Research Article

BURDEN OF PCOS IN WESTERN UP

Monika Agarwal¹, Ruchika Agarwal², Mamta Goyal³

¹Assistant Professor, Department of Obstetrics & Gynaecology, F.H. Medical College and Hospital, Agra, India.

²Associate Professor, Department of Obstetrics & Gynaecology, F.H. Medical College and Hospital, Agra, India.

³Associate Professor, Department of Obstetrics & Gynaecology, F.H. Medical College and Hospital, Agra, India.

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Corresponding Author:

Dr. Mamta Goyal

Associate Professor, Department of
Obstetrics & Gynecology, F.H.
Medical College and Hospital, Agra,
India.

Email: maasamrat@gmail.com

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ABSTRACT

Background: Polycystic ovary syndrome (PCOS) is one of the most common endocrine and metabolic disorders in adolescent to premenopausal women and is also the leading cause of anovulatory infertility. It is defined as the symptoms and signs of androgen excess and ovarian dysfunction after the exclusion of other diseases (including hyperprolactinemia, non-classical congenital adrenal hyperplasia, thyroid disease, hypogonadism, Cushing's disease, or androgen-producing tumors).

Materials and Methods: This study was conducted in the Department of Obstetrics & Gynaecology at F.H. Medical College and Hospital, Agra. The duration of study was over a period of one year. This cross-sectional study was performed in which a sample size of 175 females by random sampling was considered for the study and a well-validated questionnaire following the Rotterdam criteria for the diagnosis of PCOS was administered.

Results: This study found a total of 175 cases of PCOS among the 400 cases. The study's findings indicated a correlation between PCOS and lifestyle choices. Among the 175 cases only 19 cases had appropriate lifestyle and 156 had inappropriate lifestyle. These results suggest a potential link between lifestyle factors and the prevalence of PCOS in the studied population.

Conclusion: The findings suggest a higher prevalence of PCOS among young women in the population. While the majority of the population may not currently be affected by PCOS, a considerable percentage is prone to this condition due to inappropriate lifestyle.

Keywords: PCOS, Metabolic disorders, Menstrual Cycle, Infertility.

INTRODUCTION

Polycystic ovary syndrome (PCOS) is prevalent in 5%–18% of women of reproductive age, making it the most common endocrine disorder. While initially viewed primarily as a reproductive condition, it is now widely acknowledged that women with PCOS face elevated risks of metabolic disorders, including obesity, impaired glucose tolerance, type 2 diabetes mellitus (DMT2), metabolic syndrome, and potentially cardiovascular events. Additionally, there is evidence indicating that women with PCOS have an elevated risk of psychological morbidity, asthma, and migraine.^[1-9]

PCOS, or Polycystic Ovary Syndrome, stands out as a prevalent endocrine and metabolic disorder among adolescent to premenopausal women, being a primary cause of anovulatory infertility. It is characterized by the presence of symptoms and signs

related to androgen excess and ovarian dysfunction, diagnosed after ruling out other conditions such as hyperprolactinemia, non-classical congenital adrenal hyperplasia, thyroid disease, hypogonadism, Cushing's disease, or androgen-producing tumors.^[10,11] While the precise cause remains uncertain, there is a general consensus that lifestyle, environmental, and genetic factors significantly contribute to the onset and progression of PCOS.^[12-14] This condition not only compromises women's fertility but also poses a threat to their overall health.^[12-14] Research indicates that, based on National Institutes of Health (NIH), Rotterdam, and Androgen Excess and PCOS (AE-PCOS) Society criteria, the prevalence of PCOS is 6.1%, 19.9%, and 15.3%, respectively. The detrimental impact of PCOS is undeniable, supported by compelling evidence suggesting that its long-term complications encompass endometrial

cancer,^[15]hypertension,^[16]dyslipidemia,^[17] potential cardiovascular events,^[18] obesity,^[19] glucose intolerance, type 2 diabetes,^[20] metabolic syndrome,^[21] obstructive sleep apnea,^[22] non-alcoholic fatty liver disease,^[23]stress,^[24] anxiety,^[25] and pregnancy complications,^[26]The adverse effects of PCOS on female fertility and long-term health demand immediate and unanimous attention, urging the prompt implementation of preventive and treatment measures.

MATERIAL AND METHODS

Study Area: This study was conducted in the Department of Obstetrics & Gynaecology at F.H. Medical College and Hospital, Agra.

Study Duration: The duration of study was over a period of one year.

Study population: This cross-sectional study was performed in which a sample size of 175 females by random sampling was considered for the study and a well-validated questionnaire following the Rotterdam criteria for the diagnosis of PCOS was administered.

Data collection: Data was collected from the population, encompassing information on socio-demographic factors (including sex, date of birth, weight, and height), lifestyle, nutritional habits, menstrual cycle status (oligomenorrhea), chronic anovulation, diabetes, anxiety/stress, obesity, hirsutism, and hyperandrogenism. This study were followed the Rotterdam Criteria for selection of PCOS cases, which requiring two of the three symptoms as follows: oligo-anovulation, hyperandrogenism and/or polycystic ovarian morphology (PCOM) (≥ 12 follicles measuring 2-9 mm in diameter and/or an ovarian volume > 10 mL in at least one ovary).

Data Analysis:Data were analysed by using Microsoft Excel.

RESULTS

This study was included 400 cases. Among the 400 cases 175 had PCOS and rest were normal. Out of 175 cases of PCOS, 71 individuals were found to have obesity, 83 with stress, 17 with diabetes, and 4 with infertility. The predominant age group for PCOS cases was 21-30, followed by 15-20 (41 cases), 31-40 (38 cases), and 41-50 (10 cases). Notably, irregular menses were observed across different age groups, with 26 cases in the 15-20 age group, 47 in the 21-30 age group, 9 in the 31-40 age group, and 1 in the 41-50 age group.

Hirsutism, a common symptom of PCOS, was noted in various age brackets, with 57 cases in the 21-30 age group, followed by 16 in the 31-40 age group, 13 in the 15-20 age group, and 2 in the 41-50 age group. The study's findings indicated a correlation between PCOS and lifestyle choices. Among the 175 cases only 19 cases had appropriate lifestyle

and 156 had inappropriate lifestyle (Consumption of junk food, lack of exercise etc.).These results suggest a potential link between lifestyle factors and the prevalence of PCOS in the studied population.

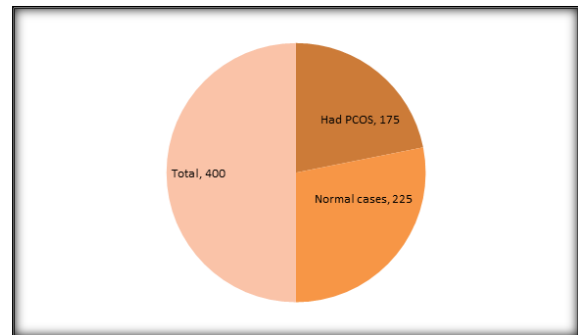


Figure 1: Distribution of cases according to PCOS

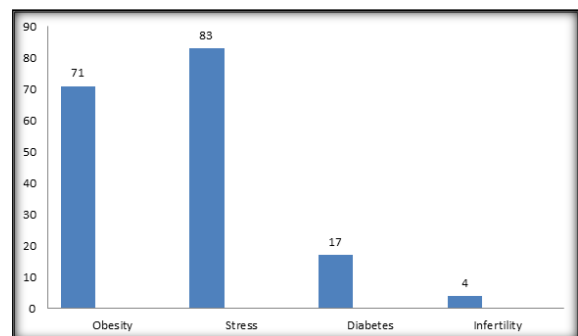


Figure 2: Distribution of cases according to Risk factor

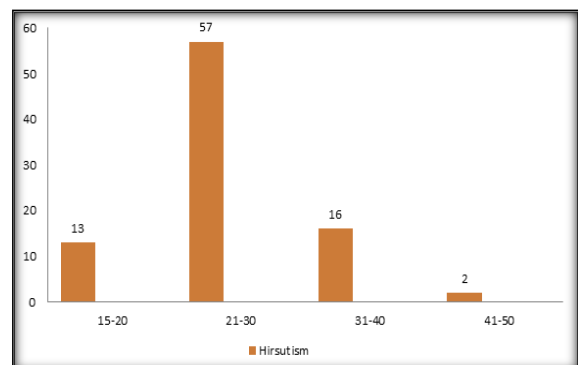


Figure 3: Distribution of cases according to Hirsutism

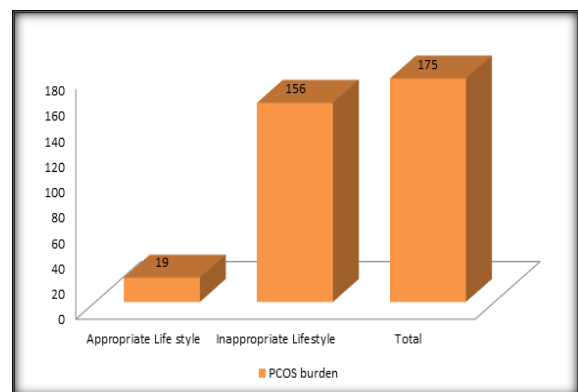


Figure 4: Burden of PCOS in according to life style

Table 1: Distribution of cases according to age group

Age	Number	Percentage
15-20	41	23.4
21-30	86	49.1
31-40	38	21.8
41-50	10	5.7
Total	175	100

Table 2: Distribution of cases according to regular and irregular menstrual cycle in relation of age

Age group	Menstrual Cycle	Number
15-20	Irregular	26
	Regular	15
21-30	Irregular	47
	Regular	39
31-40	Irregular	9
	Regular	19
41-50	Irregular	1
	Regular	9

DISCUSSION

Over the past few years, India has experienced a notable 30% increase in PCOS cases. The primary contributors to this surge are believed to be a lack of awareness and lifestyle alterations.^[27] Consequently, PCOS has become a source of concern for more than half of the adolescent and young girls, rendering them vulnerable. Girls within the adolescent age group (15-20 years) are particularly susceptible to PCOS.^[28] The study evaluated the prevalence of PCOS in young and reproductive-aged women, noting that the risk factors are more prevalent in the reproductive age group, especially concerning overweight and obesity, which significantly impacts their quality of life at a higher proportion. This concern is perceived to be more serious than other issues such as menstrual irregularities.^[29-30]

In the current study, a significant number of girls were identified as obese, with 57 cases in the 21-30 age group and 16 cases in the 31-40 age group exhibiting hirsutism. This condition is linked to elevated levels of testosterone and the presence of PCOS as observed through ultrasound. Previous research has shown that even a modest weight loss of 5% can stabilize menstrual disturbances and improve mental well-being in cases of overweight individuals, highlighting the potential enhancement of medical conditions related to PCOS through weight control.^[31-33]

The study also highlighted a concerning prevalence of hirsutism among reproductive-aged women, demonstrating a connection with emotional issues such as mood swings, low self-esteem, worry, and stress.^[34] While menstrual concerns and hirsutism have been identified as risk factors for PCOS, infertility emerges as a particularly cautious feature affecting the overall quality of life.^[35-36]

Early awareness and accurate diagnosis are crucial in improving the life of PCOS patients. However, there is a notable lack of awareness, with PCOS being prevalent in only 6.6% of the total population. It is emphasized that adopting healthy lifestyle practices through screening, early interventions, and

promoting awareness can help mitigate the rise of PCOS as an emerging disorder among adolescent and young girls.

PCOS stands as a prevalent hyperandrogenic disorder within a substantial portion of the Indian population, with an exact etiology that remains unknown, but its pathophysiology rooted in insulin resistance, hyperandrogenism, and chronic anovulation. This study concludes that there is a higher prevalence of PCOS among young women in the population. While the majority may not be currently affected by PCOS, a significant percentage is prone to the disease due to a poor lifestyle, as highlighted in a study by Eggers S et al. conducted in the same locality in 2019.^[36]

The current study has contributed to raising awareness among the female population regarding PCOS and its associated risk factors. Efforts have been made to guide women at risk of developing PCOS towards proper diagnosis and treatment under the consultation of a gynaecologist. Treatment for PCOS involves adopting a healthy diet, maintaining physical activity, and in some cases, incorporating medications to address symptoms. Regular screening of individuals with a positive family history of PCOS and precise early-age diagnosis can empower girls to lead healthy life and prevent further health complications.

Therefore, it is crucial to emphasize the importance of spreading awareness among girls for lifestyle modifications, particularly focusing on weight loss if BMI exceeds. Dietary interventions, coupled with counseling for women to encourage regular checkups when experiencing symptoms of the disease, should be prioritized to mitigate the impact of PCOS.

CONCLUSION

This study concludes that PCOS is a prevalent hyperandrogenic disorder found in a significant portion of the Indian population, and while the exact etiology remains unknown, its pathophysiology is rooted in insulin resistance, hyperandrogenism, and chronic anovulation. The findings suggest a higher

prevalence of PCOS among young women in the population. While the majority of the population may not currently be affected by PCOS, a considerable percentage is prone to this condition due to inappropriate lifestyle.

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