

Original Research Article

# PREVALENCE OF POLYCYSTIC OVARY SYNDROME AMONG WOMEN ATTENDING A TERTIARY CARE HOSPITAL

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## ABSTRACT

**Background:** Polycystic Ovary Syndrome (PCOS) is one of the most common endocrine disorders affecting women of reproductive age and is associated with significant reproductive, metabolic, and psychological complications. The prevalence of PCOS varies widely depending on diagnostic criteria, ethnicity, and lifestyle factors. There is limited region-specific data from many parts of India, necessitating localized studies. The objective is to determine the prevalence of PCOS among women of reproductive age in and to assess the associated clinical features.

**Materials and Methods:** A cross-sectional observational study was conducted among 150 women aged 15–45 years attending a tertiary care hospital. Data were collected using a structured questionnaire, including demographic details, menstrual history, and clinical features. Anthropometric measurements and pelvic ultrasonography were performed. Diagnosis of PCOS was made based on the Rotterdam criteria. Data were analyzed using appropriate statistical methods, and prevalence was expressed as percentage.

**Results:** Out of 150 participants, 27 women were diagnosed with PCOS, giving a prevalence of 18%. The majority of cases were in the 21–25 years age group (44.4%). The most common clinical feature was menstrual irregularity (81.5%), followed by hirsutism (59.3%) and acne (51.9%). A higher proportion of PCOS patients were found to be overweight or obese, indicating a strong association with increased body mass index.

**Conclusion:** The present study demonstrates a relatively high prevalence of PCOS in the studied population, particularly among young women. Early identification and lifestyle modification are essential to reduce long-term complications. Larger community-based studies are recommended to better understand the true burden of PCOS and to guide public health interventions.

**Keywords:** Polycystic Ovary Syndrome; Prevalence; Rotterdam Criteria; Reproductive Age.

## INTRODUCTION

Polycystic Ovary Syndrome (PCOS) is one of the most common endocrine disorders affecting women of reproductive age, with significant reproductive, metabolic, and psychological consequences. It is characterized by a combination of hyperandrogenism, ovulatory dysfunction, and polycystic ovarian morphology. The condition is associated with long-term health risks such as infertility, insulin resistance, type 2 diabetes mellitus, dyslipidemia, and cardiovascular disease, making it an important public health concern.<sup>[1]</sup>

The diagnosis of PCOS has evolved over time, with the widely accepted Rotterdam criteria requiring the presence of at least two of the following three features: oligo/anovulation, clinical or biochemical hyperandrogenism, and polycystic ovaries on ultrasonography, after exclusion of other etiologies. Despite standardized criteria, the reported prevalence of PCOS varies widely across populations, ranging from 6% to 20%, depending on the diagnostic criteria used, ethnicity, lifestyle factors, and study design.<sup>[2]</sup> In recent years, there has been an increasing trend in the incidence of PCOS, particularly in developing

countries like India, possibly due to rapid urbanization, sedentary lifestyle, dietary changes, and rising obesity rates. However, regional data remain limited, and variations in prevalence across different geographic and socio-cultural settings highlight the need for localized epidemiological studies.<sup>[1,3]</sup>

Understanding the burden of PCOS in a specific population is essential for early diagnosis, appropriate management, and prevention of long-term complications. Moreover, local prevalence data can aid in planning targeted screening programs and healthcare strategies.

Therefore, the present study was undertaken to assess the prevalence of PCOS among women, with the aim of contributing to existing literature and providing region-specific data for better clinical and public health interventions.

## MATERIALS AND METHODS

**Study Design and Setting:** This was a cross-sectional observational study conducted in the Department of Obstetrics and Gynecology at a tertiary care hospital, over a period of one year from July 2024 to June 2025.

**Study Population:** The study included women of reproductive age 15–45 years attending the outpatient department (OPD).

### Inclusion Criteria

- Women aged 15–45 years
- Willing to participate and provide informed consent

### Exclusion Criteria

- Known cases of thyroid disorders, hyperprolactinemia, or congenital adrenal hyperplasia
- Women on hormonal therapy (within last 3 months)
- Pregnant women

**Sample Size Calculation:** The sample size was calculated using the formula for estimating prevalence:

### Where:

- $n$  = required sample size
- $Z$  = standard normal deviate at 95% confidence interval (1.96)
- $p$  = expected prevalence of PCOS
- $q = 1 - p$
- $d$  = allowable error (precision)

Assuming a prevalence ( $p$ ) of 10% based on previous studies:<sup>[4]</sup>

- $p = 0.10$

- $q = 0.90$
- $d = 0.05$

### Substituting:

$$n = (1.96)^2 \times 0.10 \times 0.90 / (0.05)^2$$

$$n \approx 138$$

Considering a non-response rate of 10%, the final sample size was adjusted to approximately 150 participants.

**Sampling Technique:** Participants were selected using consecutive sampling from eligible women attending the outpatient department during the study period.

**Data Collection:** After obtaining informed consent, data were collected using a pre-designed structured questionnaire, including:

- Demographic details
- Menstrual history
- Clinical symptoms (hirsutism, acne, obesity)
- Family history

### Clinical and Laboratory Evaluation

- Anthropometric measurements: BMI, waist-hip ratio
- Clinical examination for signs of hyperandrogenism
- Relevant hormonal investigations (if done): serum testosterone, LH/FSH ratio
- Pelvic ultrasonography

**Diagnostic Criteria:** Diagnosis of Polycystic Ovary Syndrome was made based on the Rotterdam criteria, requiring at least two of the following:

- Oligo/anovulation
- Clinical/biochemical hyperandrogenism
- Polycystic ovaries on ultrasound

**Outcome Measures:** The primary outcome was the prevalence of PCOS among the study population.

**Statistical Analysis:** Data were entered into Microsoft Excel and analyzed using SPSS version 16.

- Prevalence was expressed as percentage
- Continuous variables were presented as mean  $\pm$  standard deviation
- Categorical variables were expressed as frequencies and percentages
- Chi-square test was used for association, with  $p < 0.05$  considered statistically significant

**Ethical Considerations:** The study was approved by the Institutional Ethics Committee of. Written informed consent was obtained from all participants.

## RESULTS

A total of 150 women of reproductive age were included in the study.

**Table 1: Age Distribution**

Age Group (years)	Number	Percentage (%)
15–20	32	21.3%
21–25	58	38.7%
26–30	36	24.0%
31–35	16	10.7%
>35	8	5.3%

The majority of participants were in the age group 21–25 years.

**Table 2: Age-wise Distribution of PCOS**

Age Group	PCOS (n=27)	Percentage (%)
15–20	5	18.5%
21–25	12	44.4%
26–30	6	22.2%
31–35	3	11.1%
>35	1	3.7%

PCOS was most commonly observed in women aged 21–25 years.

**Table 3: Clinical Features in PCOS Patients**

Clinical Feature	Number (n=27)	Percentage (%)
Menstrual irregularity	22	81.5%
Hirsutism	16	59.3%
Acne	14	51.9%
Obesity	12	44.4%
Infertility	8	29.6%

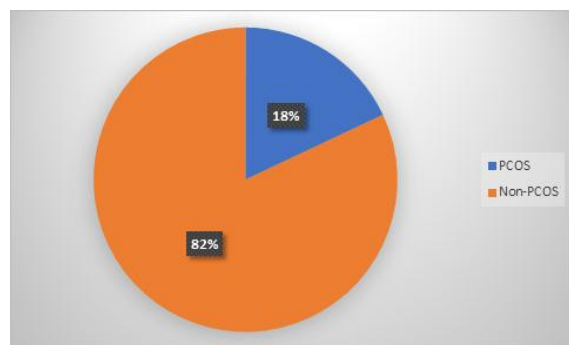
The most common presenting complaint was menstrual irregularity, followed by hirsutism and acne.

**Table 4: BMI Distribution in Study Population**

BMI Category	PCOS (n=27)	Non-PCOS (n=123)
Normal	9	72
Overweight	10	32
Obese	8	19

A higher proportion of PCOS patients were overweight or obese.

All diagnosed cases fulfilled ultrasound criteria as per Rotterdam criteria.

**Figure 1: Prevalence of PCOS among Study Participants**

Out of 150 participants, 27 women were diagnosed with Polycystic Ovary Syndrome, giving a prevalence of 18%.

## DISCUSSION

The present study assessed the prevalence of Polycystic Ovary Syndrome among women of reproductive age and found an overall prevalence of 18%. This highlights the substantial burden of PCOS in the studied population and reinforces its importance as a growing public health concern.

The prevalence observed in our study is consistent with several Indian studies. For instance, Nidhi et al,<sup>[5]</sup> reported a prevalence of approximately 9.13% among adolescents in South India, which is lower than our findings, possibly due to differences in age group and diagnostic criteria. Similarly, Joshi et al,<sup>[6]</sup> reported a prevalence ranging between 8–22.5%, which aligns closely with our results. The higher prevalence in our study may be attributed to hospital-based sampling and inclusion of symptomatic women.

Internationally, studies such as March et al,<sup>[7]</sup> have reported a prevalence of 6–10% using strict diagnostic criteria, while broader criteria like the Rotterdam criteria have shown prevalence rates up to 15–20%, which is comparable to our findings. This variation highlights the influence of diagnostic definitions, ethnicity, and lifestyle factors on prevalence estimates.

In our study, the majority of PCOS cases were observed in the 21–25 years age group (44.4%), which is similar to findings by Balaji et al,<sup>[8]</sup> who reported higher prevalence among young adults. This age predilection may be due to increased health-seeking behavior, cosmetic concerns, and reproductive planning during this period.

Menstrual irregularity was the most common clinical feature (81.5%) in our study, followed by hirsutism and acne. These findings are in agreement with Deswal et al,<sup>[9]</sup> who also reported menstrual dysfunction as the predominant presenting symptom. The high prevalence of hyperandrogenic features such as hirsutism (59.3%) further supports the clinical heterogeneity of PCOS.

A notable observation in our study was the association between PCOS and increased body mass index. A higher proportion of affected women were overweight or obese, consistent with findings from Lim et al,<sup>[10]</sup> who demonstrated a strong correlation between obesity and PCOS due to underlying insulin resistance. This emphasizes the role of lifestyle factors such as sedentary habits and dietary patterns, particularly in urban and semi-urban populations in India.

The prevalence observed in our study appears slightly higher than some community-based studies. This discrepancy can be explained by the hospital-based design, which tends to include more symptomatic individuals, thereby increasing the detected

prevalence. Additionally, the use of the Rotterdam criteria, which is more inclusive, may have contributed to higher case identification.<sup>[11,12]</sup>

**Strengths of the Study:** Provides region-specific prevalence data, which is limited in literature  
Use of standard diagnostic criteria (Rotterdam).  
Inclusion of clinical and ultrasound parameters

#### **Limitations**

- Hospital-based study, limiting generalizability
- Relatively small sample size (n=150)
- Lack of long-term metabolic follow-up

## **CONCLUSION**

The findings of the present study are largely consistent with both Indian and international literature, confirming that PCOS is highly prevalent, particularly among young women. Variations in prevalence across studies emphasize the need for standardized diagnostic approaches and large-scale community-based studies.

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