

# PHYSICAL ACTIVITY PATTERNS AND ANTHROPOMETRIC PROFILE AMONG WOMEN WITH POLYCYSTIC OVARY SYNDROME

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## ABSTRACT

**Introduction:** Polycystic Ovary Syndrome (PCOS) is a common endocrine disorder associated with metabolic and reproductive abnormalities. Physical inactivity is a key modifiable risk factor.

**Aim:** To assess physical activity patterns and their association with Body Mass Index (BMI) among women with PCOS.

**Materials and Methods:** A cross-sectional descriptive study using convenience sampling was conducted among 100 women aged 20–40 years diagnosed with PCOS. Data were collected using a structured questionnaire including anthropometric measurements and physical activity patterns. Statistical analysis was performed using the chi-square test.

**Results:** The mean age was 26 years. Mean BMI was 29.08 kg/m<sup>2</sup> and WHR was 0.90. About 75% were physically inactive. Walking was the most common activity. No significant association between BMI and physical activity was found ( $\chi^2 = 0.81$ ,  $p = 0.847$ ).

**Conclusion:** Physical inactivity is highly prevalent among women with PCOS. Lifestyle interventions are essential.

**Keywords:** PCOS, Physical Activity, BMI, Waist–Hip Ratio

## INTRODUCTION

Polycystic Ovary Syndrome (PCOS) is a common endocrine disorder affecting women of reproductive ages and is characterized by menstrual irregularities, hyperandrogenism, and polycystic ovarian morphology. It is frequently associated with metabolic disturbances such as obesity and insulin resistance (1,2).

Lifestyle factors, particularly physical activity, play a crucial role in the management of PCOS. Regular exercise has been shown to improve insulin sensitivity, regulate menstrual cycles, and reduce cardiovascular risk (3).

Recent evidence suggests that sedentary behavior is highly prevalent among women with PCOS, contributing to adverse metabolic outcomes (4,5). Therefore, assessing physical activity patterns is essential for understanding disease burden and guiding interventions.

Hence, the present study was conducted to assess physical activity patterns and their association with BMI among women with PCOS.

## MATERIALS AND METHODS

**Study Design:** A Cross-sectional descriptive study was conducted using convenience sampling method among women diagnosed with PCOS

**Study Area:** Hyderabad, India

**Sample Size:** A total of 100 women diagnosed with PCOS who fulfilled the inclusion criteria were recruited during the study period.

**Inclusion Criteria:** Women aged 20–40 years with a confirmed diagnosis of PCOS by a gynecologist were included in the study

**Exclusion Criteria:** Women below 20 and above 40 years

**Data Collection:** A structured questionnaire was used. The questionnaire included sections on general information, anthropometric measurements, dietary habits and physical activity patterns.

**Statistical Analysis:** Data were entered into Microsoft Excel and analyzed. Descriptive statistics including mean, standard deviation, frequencies and percentages were calculated. The Chi-square test was used to assess the association between BMI categories and physical activity status. A p-value <0.05 was considered statistically significant.

Ethical approval was obtained from the Institutional Ethics Committee prior to commencement of the study. Written informed consent was obtained from all participants.

## RESULTS & DISCUSSION

A total of 100 women diagnosed with Polycystic Ovary Syndrome were included in the study.

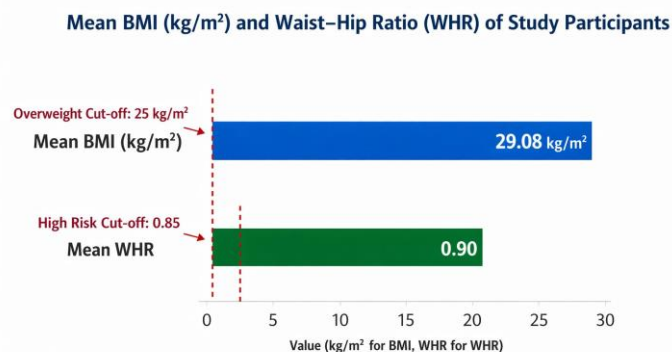
**Demographic Characteristics:**

The mean age of the participants was 26 years. Among them, 57% were employed and 43% were unemployed.

**Anthropometric Measurements:**

Body Mass Index (BMI) was calculated as weight (kg) divided by height squared ( $\text{m}^2$ ). BMI was classified according to WHO Asia-Pacific classification as underweight ( $<18.5 \text{ kg/m}^2$ ), normal ( $18.5\text{--}22.9 \text{ kg/m}^2$ ), overweight ( $23\text{--}24.9 \text{ kg/m}^2$ ), obese class I ( $25\text{--}29.9 \text{ kg/m}^2$ ) and obese class II ( $\geq 30 \text{ kg/m}^2$ ).

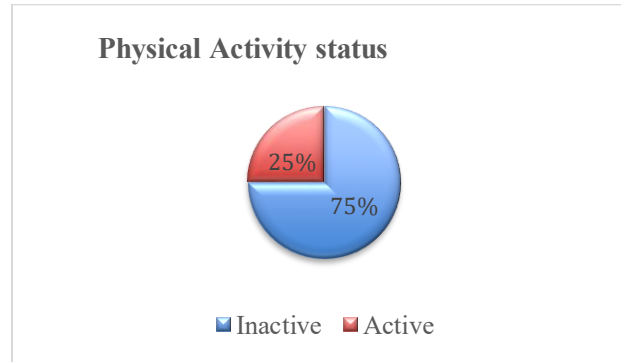
The mean Body Mass Index (BMI) of the participants was  $29.08 \text{ kg/m}^2$ , indicating an overall overweight status. The mean waist–hip ratio (WHR) was 0.90, suggesting the presence of central obesity.



**Figure 1: Mean BMI and WHR status**

## Physical Activity Status

The distribution of physical activity among participants revealed that 75% were physically inactive, while only 25% reported engaging in some form of physical activity



**Figure:2 Distribution of Physical activity status among participants**

#### Type of Physical Activity:

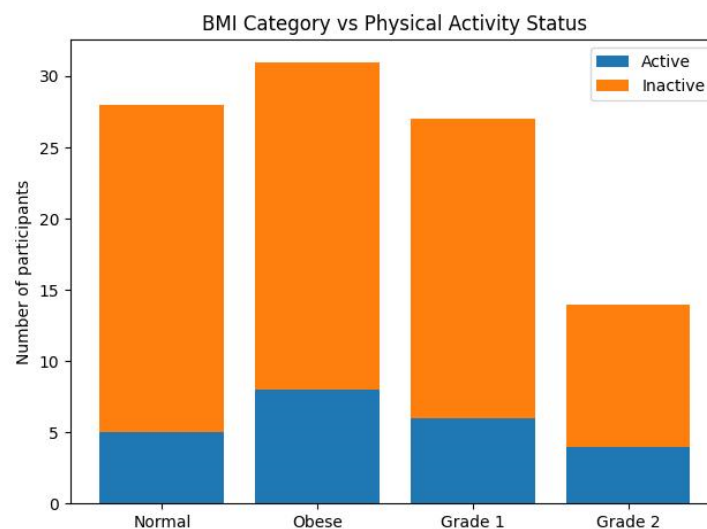
Among the physically active participants (n=25), the majority (84%) reported walking as their primary form of exercise. A smaller proportion engaged in skipping (8%) and a combination of activities (8%).

#### Duration of Physical Activity:

The average duration of walking among participants was 25 minutes per day, whereas skipping was performed for an average of 20 minutes per day.

#### Association between BMI and Physical Activity:

The association between BMI categories and physical activity was analysed using the chi-square test. Among participants with normal BMI, 5 out of 28 were physically active, while 8 out of 31 obese participants, 6 out of 27 grade I obese participants, and 4 out of 14 grade II obese participants were physically active. However, no statistically significant association was observed between BMI and physical activity ( $\chi^2 = 0.81$ ,  $p = 0.847$ )



**Figure 3: BMI vs physical activity status**

## DISCUSSION

The present study assessed physical activity patterns and their association with anthropometric parameters among women with Polycystic Ovary Syndrome. The findings revealed that the mean BMI (29.08 kg/m<sup>2</sup>) and waist-hip ratio (0.90) were elevated, indicating a high prevalence of overweight and central obesity among the participants. Similar findings of elevated BMI and central obesity among women with PCOS have been reported by Butt et al. and Delavar et al., indicating increased metabolic risk in this population.

These findings are consistent with previous studies reporting increased adiposity and metabolic risk in women with PCOS.

A key observation of this study was the high prevalence of physical inactivity, with 75% of participants reporting no regular physical activity. Among the physically active participants, walking was the most commonly reported activity (84%), while only a small proportion engaged in skipping or combined activities. The average duration of physical activity was also relatively low (25 minutes for walking), which is below WHO recommended physical activity levels. This indicates that even among active individuals, the intensity and duration of exercise may not be sufficient to achieve significant health benefits.

The prevalence of physical inactivity observed in the present study is comparable to findings reported by Mann et al., who observed lower levels of physical activity among women with PCOS. This aligns with existing literature suggesting that sedentary behavior is common among women with PCOS and contributes to worsening metabolic outcomes.

The analysis of association between BMI and physical activity revealed no statistically significant relationship ( $p = 0.847$ ). This finding suggests that physical inactivity was prevalent across all BMI categories, indicating that sedentary behavior is widespread irrespective of weight status. Similar observations have been reported in other studies, where lifestyle patterns rather than BMI alone influenced physical activity levels.

Overall, the study highlights the role of physical activity in the management of PCOS and emphasizes the need for targeted interventions to improve lifestyle behaviors. Promoting regular and structured exercise may help reduce metabolic risk and improve overall health outcomes in this population.

“Physical inactivity was consistently observed across all BMI categories, highlighting a widespread sedentary pattern among women with PCOS.”

#### Limitations:

The study was limited by a small sample size and reliance on self-reported data. Additionally, the cross-sectional design does not allow for causal interpretation

#### Clinical Significance:

The findings emphasize the importance of promoting physical activity as a primary lifestyle intervention in the management of PCOS to reduce metabolic risk.

### CONCLUSION

Physical inactivity was highly prevalent among women with PCOS irrespective of BMI category. The findings highlight the need for structured lifestyle interventions focusing on regular physical activity to improve metabolic health and reduce long-term complications associated with PCOS.

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