

## Addition of Central Obesity Criteria Increases the Prevalence of Clinical Obesity in Women with Polycystic Ovary Syndrome

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### Abstract

**Background:** The Lancet Diabetes & Endocrinology Commission 2025 has recommended a newer definition and diagnostic criteria for clinical obesity. The impact of this newer definition has not been evaluated among women with polycystic ovary syndrome (PCOS).

**Objectives:** To determine and compare the frequency of obesity with previous and newer definitions among women with PCOS

**Methods:** This cross-sectional study included 765 adult women [age (years):  $23.8 \pm 4.5$ ; BMI ( $\text{kg}/\text{m}^2$ ):  $27.7 \pm 5.3$ ; mean  $\pm$  SD] with (newly diagnosed/ untreated for at least three months) PCOS based on the Rotterdam criteria from a University hospital in South Asia. Participants' height, weight, waist circumference (WC), and hip circumference were measured. Body mass index (BMI), waist/hip ratio (WHR), and waist/height (WHtR) were calculated. Three BMI cut-offs of 23.0, 25.0, and 27.5  $\text{kg}/\text{m}^2$  were considered. The cut-off of WC, WHR, and WHtR were 80 cm, 0.85, and 0.5, respectively. The following two criteria were used to define obesity: i) BMI + WC/WHR/WHtR, and ii) any two from WC, WHR, & WHtR regardless of BMI. Additionally, blood pressure (BP), glycemic status (fasting & OGTT glucose, HbA1C), and lipid profile (triglyceride & HDL-cholesterol) were considered for clinical obesity.

**Results:** Using the BMI cut-offs of 23, 25, and 27.5  $\text{kg}/\text{m}^2$ , the prevalence of obesity was 82.1%, 67.5%, and 47.1%, respectively. Using the current definition, the prevalence of obesity was 80.5%, 81.4%, and 79.4%, respectively, for the three BMI cut-offs, resulting in increases in prevalence of 1.8%, 20.7%, and 68.6%, respectively. All participants with obesity had clinical obesity, as the presence of PCOS indicates an ongoing illness. Besides, a significant portion had arterial hypertension, dysglycemia, and lipid abnormalities.

**Conclusions:** The Presence of higher central obesity (WC, WHR, WHtR) than generalized obesity (BMI) paradoxically increased the diagnosis of clinical obesity among South-Asian women with PCOS. [*J Assoc Clin Endocrinol Diabetol Bangladesh*, 2024;3(Suppl 1): S64]

**Keywords:** Obesity, Polycystic ovary syndrome, Central obesity, Waist circumference, Waist/hip ratio, Waist/height ratio

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