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Age-associated Changes in Adiposity and Impact on Insomnia Severity in Women with Polycystic Ovary Syndrome: A Pilot Observational Study

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ABSTRACT

Introduction: Polycystic Ovary Syndrome (PCOS) is frequently manifested by metabolic abnormalities and increased adiposity. However, the influence of age on regional fat accumulation and how this relates to sleep disturbances remains unexplored.

Aim: This study aimed to examine the relationships between age, specific anthropometric measures, and insomnia severity in women diagnosed with PCOS.

Materials and Methods: A total of 30 women aged between 18-34 years, with clinically confirmed PCOS were enrolled in this cross-sectional study. Comprehensive anthropometric assessments were conducted, including waist circumference, arm circumference, and skinfold thickness (triceps, subscapular, supra-iliac, calf) and Body Mass Index (BMI). Insomnia was evaluated using the Insomnia Severity Index (ISI). Spearman's rank correlation was applied to identify statistically significant associations ($p<0.05$).

Results: The results of the study indicated that the adiposity of the upper body in women with PCOS increased with age, as demonstrated by the higher BMI ($\rho = 0.497$, $p = 0.011$), waist circumference ($\rho = 0.498$, $p = 0.011$), arm circumference ($\rho = 0.475$, $p = 0.016$), and triceps ($\rho = 0.446$, $p = 0.025$) and subscapular ($\rho = 0.497$, $p = 0.011$) skinfold thicknesses. The skinfolds around the supra-iliac ($\rho = 0.590$, $p = 0.002$) and calf ($\rho = 0.618$, $p = 0.001$) were most strongly linked to worse insomnia, while BMI alone had lower associations with insomnia.

Conclusion: In women with PCOS, increasing age is strongly associated with increased levels of upper-body fat, although supra-iliac and calf adiposity appear to be more predictive of sleep difficulties than overall obesity measurements. These findings highlight the significance of accounting for age-related body composition changes and targeted fat deposition when treating insomnia in PCOS patients.

Keywords: Anthropometric measures, Skinfold thickness, Upper body fat.