The relationship between Obstructive Sleep Apnoea and Quality of Life in women with Polycystic Ovary Syndrome: A cross-sectional study

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Introduction
Obstructive sleep apnoea (OSA) and polycystic ovary syndrome (PCOS) are associated with significant comorbidities and commonly coexist. The primary aim of this study was to examine the relationship between OSA and quality of life (QoL) in women with PCOS.

Methods
We conducted an observational cross-sectional study. PCOS was diagnosed according to the Rotterdam criteria. Women with increased risk of OSA, based on the Berlin questionnaire and/or the Epworth Sleepiness Scale (ESS), had home-based polysomnography performed (ALICE Pdx). Participants were divided into two groups: 1) PCOS only: women with normal ESS and low-risk Berlin questionnaire (no sleep studies performed), or women with normal sleep studies [oxygen desaturation index (ODI) < 5 events/hour]; and 2) PCOS+OSA: women with PCOS and OSA ODI ≥5. QoL was assessed using the World Health Organisation QoL questionnaire (WHOQOL-BREF) and the PCOS health-related quality of life questionnaire (PCOSQ).

Results
39 women were included and 15 were found to have OSA (38.5%), Table 1. ODI was independently associated with impaired QoL, Table 2. Excessive daytime sleepiness (EDS) was independently associated with anxiety, depression, and impaired QoL, Table 2.

Table 1. Baseline characteristics for women with PCOS+OSA compared to women with PCOS only. BMI, body mass index; ESS, Epworth sleepiness scale; OCP, oral contraceptive pill; OSA, obstructive sleep apnoea; PCO, polycystic ovaries; PCOS, polycystic ovary syndrome. Normally distributed data were presented as mean ±standard deviation, while non-normally distributed data were presented as median (interquartile range). Frequencies were presented as numbers (percentages).

Table 2. Predictors of QoL and psychological health outcomes in women with PCOS using linear regression. ESS, Epworth Sleepiness Scale; HADS, Hospital Anxiety and Depression scale; WHOQOL, World Health Organisation QoL-BREF questionnaire; PCOSQ, PCOS health-related quality of life questionnaire. R² is given for the adjusted model.

Conclusions
In women with PCOS, intermittent hypoxaemia and EDS were associated with lower QoL. EDS was also associated with anxiety and depression. Interventional studies are needed to examine these associations further, aired QoL.