Sleep Study and Quality of Life Correlation in Sleep Apnea

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This study assesses the relationship between objective and subjective outcomes of obstructive sleep apnea (OSA) in adults. The sleep study, or polysomnography (PSG), is considered the gold standard for assessing severity of OSA and outcomes of treatment. The physiologic metrics are assumed to estimate symptoms and quality of life (QOL) deficits associated with OSA. We hypothesize that PSG measures correlate poorly with QOL measures and thus that QOL should be assessed explicitly as a clinically important outcome of OSA and OSA treatment.

Methods/Measures
This ongoing cross-sectional study involves patients referred for a full night, semi-monitored, in-lab diagnostic partial PSG at the American Lake VA Hospital for suspicion of sleep apnea. Respiratory Disturbance Index (RDI), Apnea Index (AI), lowest oxygen saturation (LSAT), and hypoxemic burden (% sleep time with oxygen saturation < 90%) were recorded. Immediately before the PSG, each patient completed a battery of self-administered validated instruments measuring functional status (SF36), general QOL (PQOL and Health Desirability), OSA-specific QOL (SNORE), and sleepiness (ESS). Spearman rank correlation coefficients were computed for the associations between PSG and subjective measures.

Results
Our sample (n = 31) consists of middle-aged (mean age 51 years), obese (mean body mass index 32 kg/m²), predominantly male (97% males) veterans. PSG parameters correlate poorly with the subjective measures (mean $|r_s| = 0.16 \pm 0.22$, range 0.005 – 0.35). 0/20 possible associations between PSG parameters (RDI, AI, LSAT, hypoxemic burden) and subjective measures (SF36, PQOL, Health Desirability, SNORE, ESS) were statistically significantly different from 0 (mean $p = 0.44$, range 0.054 – 0.98). Among the PSG parameters, RDI correlates least with the subjective parameters (mean $|r_s| = 0.10$).

Conclusions
In our sample, PSG parameters are not associated with subjective measures of OSA severity. In particular, RDI, which is the most commonly reported parameter of OSA severity and currently defines our clinical categories of OSA, is not associated with subjective measures of OSA severity.

Clinical Significance
One should not assume that the objective measures of OSA severity by PSG accurately reflect disease-specific QOL in sleep apneics. These data suggest that subjective measures should complement the objective parameters used to assess OSA severity and outcomes.

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