

# Pulmonary Rehabilitation in Obstructive Sleep Apnea: The Ignored Modality

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**Keywords:** Chronic respiratory disease, Obstructive sleep apnea, Sleep-related breathing disorders.

*Indian Journal of Sleep Medicine* (2024): 10.5005/jp-journals-10069-0126

## Dear Editor,

Obstructive sleep apnea (OSA) is characterized by an apnea-hypopnea index (AHI) of at least 5 events/hour with symptoms, with more than 50% of the total events being obstructive or mixed events rather than central ones.<sup>1</sup> Pulmonary rehabilitation (PR) is a comprehensive intervention based on a thorough patient assessment followed by patient-tailored therapies that include but are not limited to, exercise training, education, and behavior change, designed to improve the physical and psychological condition of people with chronic respiratory disease and to promote the long-term adherence to health-enhancing behaviors.<sup>2</sup> In a recent official American Thoracic Society clinical practice guideline on PR for adults with chronic respiratory disease, there is a strong recommendation for PR in adults with stable chronic obstructive pulmonary disease (COPD), after hospitalization for COPD exacerbation and even in interstitial lung disease.<sup>3,4</sup> However, there is no mention of OSA patients for PR recommendation despite evidence for the same.

A single center pilot randomized controlled trial which allocated OSA with obesity hypoventilation syndrome (OHS) patients to standard care or standard care plus rehabilitation found that those who had received a 3-month full rehabilitation program in addition to non-invasive ventilation had increased quality of life (QoL), exercise ability, and weight reduction. Similarly, a single center, two-arm, parallel, randomized, controlled, and open-label study enrolled 40 patients with moderate or severe OSA randomized patients to positive airway pressure therapy (PAP) and CPAP+PR group. Patients in the PR group received six weeks of 60-minute, twice-weekly, individual PR programs. This study concluded that OSA patients benefit from a PR program as part of their overall care.<sup>5</sup> Another study evaluating the effect of PR on exercise capacity, dyspnea, and health-related QoL (HRQoL) in functionally limited OSA patients (Higher Medical Research Council Dyspnea Scores) concluded that PR may be beneficial to improve exercise capacity, dyspnea and HRQoL for OSA patients.<sup>6</sup> A recent study evaluated efficacy of PR on exercise capacity, health related quality of life (HRQoL), daytime sleepiness, and sleep QoL in OSA patients. By the time of the 8-week follow-up, the BMI, 6MWD, SGRQ, ESS, and FOSQ of the PR recipients had significantly improved from baseline. The study concluded that PR should be a part of the comprehensive care of all patients with OSA.<sup>7</sup>

Thus, even though PAP is the mainstay for the treatment of OSA, non-PAP treatment including PR should not be ignored. Treatment for PR has been proven to be beneficial for patients with OSA. The ignorance of PR in OSA needs to be addressed by widespread education of physicians, physiotherapists, and patients

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**How to cite this article:** Kumawat SK, Ish P, Kumar R, et al. Pulmonary Rehabilitation in Obstructive Sleep Apnea: The Ignored Modality. *Indian J Sleep Med* 2024;19(1):9–10.

**Source of support:** Nil

**Conflict of interest:** None

at large. There is a need for OSA to be addressed in PR guidelines at national and international levels. The huge magnitude of OSA patients and the majority of them having obesity makes PR an important component of their multimodality management plan.

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