

## Effect of Balloon-Blowing on Dyspnea and Oxygenation in Noncritical Adult Covid-19 Patients: A Pilot Study

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### ABSTRACT

Dyspnea and decreased O<sub>2</sub> saturation are the most common causes of hospitalization in noncritical Covid-19 patients. Breathing exercises and chest physiotherapy are used for managing the patients. These treatments are however not well supported by scientific evidence. In a randomized controlled trial, 80 patients were randomly assigned to planned breathing-exercise (n=40) and control groups (n=40). The participants in the intervention group were instructed to blow into a balloon five times a day while lying down. Other therapies were similar in both groups. The severity of dyspnea at rest/after activity and peripheral oxygen saturation (SpO<sub>2</sub>) with/without O<sub>2</sub> therapy were compared between the two groups on the first, second, and third days. The study findings showed no statistically significant difference in SpO<sub>2</sub> with/without O<sub>2</sub> therapy on the first, second, and third days between the two groups. Although the severity of dyspnea showed no significant difference between the two groups, the mean score of dyspnea at rest (2.72±2.25 vs. 1.6±1.21, p=0.007) and after activity (4.53±2.04 vs. 3.52±1.66, P=0.017) improved in the intervention group on the third day. Balloon-blowing exercise improves dyspnea in noncritical Covid-19 patients, but it does not significantly improve oxygenation.

**Keywords:** Breathing exercises, Balloon-blowing, BBE, Chest physiotherapy, Covid-19, Dyspnea, Oxygenation, Pulmonary rehabilitation

**Abbreviations:** BBE: Balloon-Blowing Exercise; SpO<sub>2</sub>: Peripheral Oxygen Saturation

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