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Fatigue in COPD: A Multidimensional Perspective

[Zjala Ebadi](#) | [Yvonne Goërtz](#) | [Maarten Van Herck](#) [Show More ▾](#)

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Abstract

Background: Fatigue is a pervasive, debilitating symptom of chronic obstructive pulmonary disease (COPD) that significantly impacts patients' overall health and quality of life. However, its underlying mechanisms and associations with physical, psychological, behavioral, and other health factors remain unclear. This study investigated possible causal relationships between fatigue and these factors in COPD.

Methods: A total of 247 COPD patients (mean age: 67.3 ± 8.1 years; 60% male; mean forced expiratory volume in 1 second (FEV1) $57 \pm 21\%$ predicted) from primary and secondary care were enrolled in a longitudinal observational study. Two-wave autoregressive cross-lagged panel models (ARCLM) examined relationships between fatigue and associated factors at baseline and one year later.

Results: Severe fatigue was prevalent in 53% of participants at baseline, with no significant change at follow-up. ARCLM findings indicated that baseline physical activity was the only predictor of reduced fatigue after one year. Moreover, higher baseline fatigue predicted poorer health-related quality of life, more severe dyspnea, and greater dyspnea-related emotional distress at follow-up. Although the initial focus was on fatigue, the analysis revealed a complex network of longitudinal relationships between multiple studied variables extending beyond fatigue.

Conclusion: This study underscores the intricate interplay between fatigue, dyspnea, physical functioning, psychological, behavioral, and other health status factors in COPD. The potential causal pathways identified suggest that addressing these interrelated factors through a comprehensive, multidimensional approach is critical to effectively managing fatigue in COPD patients.

Footnotes

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