

Efficacy of Transcutaneous Electrical Diaphragmatic Stimulation and Myofascial Release on Diaphragm Mobility, Pulmonary Function Test Parameters and Activity of Daily Living in Patients with COPD: A Study Protocol

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ABSTRACT

Introduction: Chronic Obstructive Pulmonary Disease (COPD) is a progressive respiratory condition characterised by reduced diaphragm mobility, impaired pulmonary function, and decreased ability to perform Activities of Daily Living (ADL). Transcutaneous Electrical Diaphragmatic Stimulation (TEDS) and myofascial release have shown promise as interventions to improve respiratory mechanics and functional outcomes. However, the combined efficacy of these techniques in COPD patients remains unexplored.

Need for this study: This study will outline a rigorous approach to assess the efficacy of TEDS and myofascial release in improving respiratory function and quality of life in COPD patients. Findings from this trial are expected to guide future rehabilitation strategies for COPD management.

Aim: This study aims to evaluate the efficacy of TEDS and myofascial release on diaphragm mobility, Pulmonary Function Test (PFT) parameters, and ADL in patients with COPD.

Materials and Methods: A randomised, controlled, double-blind study will be conducted with participants meeting specific inclusion criteria. Subjects will be randomly assigned to the experimental group and the control group. The experimental group will receive TEDS at a frequency of 30 Hz for 30 minutes per day, five days a week and diaphragm myofascial release for 2 sets of 10 repetitions with a 1-minute interval between sets. The control group will receive sham TEDS and the same myofascial release protocol. Both groups will undergo treatment for 3 weeks. Pre- and post-intervention assessments will include diaphragm mobility will be measured using ultrasonography, PFT parameters will be assessed via spirometry, and ADL will be evaluated using the London Chest Activity of Daily Living Scale.

Keywords: Diaphragm, Spirometry, Ultrasonography.