

Prevalence of Chronic Obstructive Pulmonary Disease among Firecracker Workers in A Fire-cracker Industry, Sivakasi

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Abstract

Background: Emphysema, minor airway blockage, and chronic bronchitis are all included in the diagnosis of chronic obstructive pulmonary disease (COPD). The primary pathological basis of the condition is incompletely reversible airflow limitation, inflammation, excessive mucus secretion, and bronchial mucosal epithelial lesions. Globally, COPD is receiving attention due to the significant obstacles that its high frequency, morbidity, and mortality provide to systems of healthcare.

Methods: 242 participants working in the firecracker industry will be recruited among 2500 workers in the industry (manufacturing unit) who were in regular exposure to chemicals and qualify the inclusion criteria. Each participant was given a LUNG FUNCTION questionnaire. A portable hand-held spirometer (peak flow meter) measures FEV1, FVC, and their ratio. The readings will be visible on the device following the user manual. The results (FEV1 %) were collected. The outcomes (LUNG FUNCTION questionnaire and Spirometry) were collected and analyzed, and the prevalence of COPD was found. Study duration-6weeks. Following this, the findings will be documented and analyzed statistically.

Results: Most of the sample falls within GOLD 2 (Moderate) COPD severity, indicating a significant prevalence of moderate airflow limitation. A substantial portion of participants (67.77%) have lung function questionnaire scores indicating poorer lung function (≤ 18).

Conclusion: Both FEV1 percentage and LFQ scoring show statistically significant differences from their respective thresholds, suggesting impaired lung function and emphasizing the importance of early detection and management of COPD.