Dust Exposure as a Risk Factor for Respiratory Disease

av

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Abstract

This thesis aimed to explore the associations between subjective and objective exposures to airborne small particulate matter and its impact on respiratory symptoms, lung function, and respiratory diseases.

The first paper investigated whether Swedish soldiers exposed to desert environments had a higher prevalence of respiratory symptoms. The second paper examined the relationship between airborne particulate matter exposure in Mali and the risk of developing respiratory symptoms, lung function impairment, and airway inflammation, measured as FeNO. The third paper focused on occupational exposure to silica, wood, and paper dust and its associations with respiratory symptoms and lung function. The final paper assessed the effects of traffic and occupational exposure on self-reported respiratory symptoms, asthma, and chronic bronchitis in a multi-center Swedish population.

Results indicated that soldiers in desert environments experienced a higher prevalence of wheezing and coughing, with a dose-response relationship showing that longer deployment times correlated with increased symptoms. FEV1 significantly decreased after exposure to desert storms, likely due to small particulate matter. Additionally, exposure to inhalable wood dust was linked to reduced lung function, while traffic and occupational exposures were independently associated with respiratory issues. The findings highlight the need for pollution reduction measures and thorough exposure histories when managing respiratory symptoms amongst patients.

Keywords: Dust, exposure, PM2.5, lung function