Acute Bronchitis Medical Utilization and Dust Storm Events

Dr. Tsai-Ching Liu

Department of Public Finance, National Taipei University, Taiwan

Abstract:

Previous studies have largely overlooked the connection between dust storms and the medical utilization for bronchitis. This study addresses this gap by examining the relationship between dust storm events and both outpatient and inpatient visits for acute bronchitis. Utilizing long-term national health insurance data from the Ministry of Health and Welfare alongside dust storm records from the Environmental Protection Agency from 2000-2012, the analysis reveals that dust storms significantly elevate the incidence of acute bronchitis. Notably, within a few days after a dust storm, both outpatient and inpatient visits are markedly higher than on days without such events. Outpatient visits increase significantly for up to six days post-dust storm across all genders, age groups, and residential areas. Inpatient visits also show a pronounced surge—peaking on the third day after a dust storm—with subgroup analyses indicating particularly strong effects among males, individuals under 45, and residents in specific regions. These findings confirm a robust correlation between dust storms and increased medical utilization for acute bronchitis, emphasizing that all demographic groups are at heightened risk. The study calls for proactive public health measures, urging authorities to implement timely advisories and preventive strategies to reduce exposure to dust storm-related air pollution and safeguard public health.

Keywords:

Dust storm, air pollution, bronchitis, medical utilization.