

Persistent Respiratory Symptoms Are A Risk Factor For Mental Health Symptoms In Residents And Workers Exposed To World Trade Center Dust, Gas And Fumes Presenting For Medical Care

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Rationale: The World Trade Center Environmental Health Center (WTC EHC) is a medical and mental health treatment program serving symptomatic residents, area workers, and clean-up workers exposed to pollutants released by the destruction of the WTC towers. Persistent respiratory symptoms and lung function abnormalities 5 or more years after the event have been described in this population. While posttraumatic stress (PTS), depression, and anxiety symptoms have been reported in individuals with diverse exposures to WTC dust, gas, and fumes even 5-6 years after the event, their relationship to physical symptoms is unknown.

Methods: Patients were self-referred to the Bellevue Hospital WTC EHC for physical symptoms and underwent a standardized medical and mental health screening evaluation, including a multi-dimensional questionnaire, history, physical exam, blood tests, chest x-ray, pulmonary function studies, and screening for PTS symptoms, depression, and anxiety.

Results: Between September 2005 and February 2009, 1852 individuals participated in the WTC EHC. Median age was 49 (range 19-90), and 48% were women. Nearly half reported having been caught in the dust cloud caused by the collapsing buildings. Forty-three percent were area workers, 24% cleanup workers, 20% area residents, 10% rescue and recovery workers, 3% other. Nine percent reported new and persistent upper respiratory symptoms (nasal or sinus congestion) only, 38% lower respiratory symptoms (cough, wheeze, dyspnea, chest tightness) only, and 31% both upper and lower respiratory symptoms. Most individuals (61%) scored positive for WTC-related mental health symptoms on at least one screening measure, including PTS symptoms (41%), depression (55%), and anxiety (28%). Dust cloud exposure, clean-up work, and persistent respiratory symptoms were risk factors for PTSD symptoms in this population.

Conclusions: Five or more years after the WTC attack, residents, area workers, and clean-up workers often suffer from a complex combination of chronic PTS symptoms, depression, and anxiety, frequently coupled with respiratory symptoms. Health care providers caring for patients with physical symptoms and diverse WTC exposures should be alert to mental health symptoms, particularly in clean-up workers, individuals who were caught in the dust cloud, and those with persistent respiratory symptoms. Our finding of high rates of mental health comorbidity among WTC-exposed individuals presenting with respiratory symptoms supports a multidisciplinary approach to treatment for this population and for victims of other environmental disasters.

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