Seasonality and climatic associations with violent and nonviolent suicide: a population-based study

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摘要

Abstract

Background: Using 7-year population-based data on Taiwan, we examined seasonal variation in violent versus nonviolent suicide, and its association with meteorological factors: ambient temperature, relative humidity, atmospheric pressure, rainfall and daily sunshine hours. Methods: We used Taiwan's nationwide mortality data from 1997 to 2003, categorizing the sample decedents into two groups, violent (ICD-9-CM codes E953-E958) and nonviolent (E950-E952) suicide, based on the suicide method used. Seasonal autoregressive integrated moving average (SARIMA) modeling was used to detect seasonality of suicide, and the association of climate variables with violent versus nonviolent suicide. Results: The SARIMA test of seasonality was significant for both genders and the pooled sample (all $p < 0.001$) in violent suicide deaths, but not nonviolent suicides. Seasonal trends show a significant peak in March-May (early to late spring) for violent suicides. Increasing ambient temperature predicted increasing violent suicide rates. Conclusions: We conclude that seasonality exists in violent but not nonviolent suicide rates. Our findings suggest that suicide is a heterogeneous phenomenon and violent suicide may be more influenced by biochemical and chronobiological mechanisms.