Desafíos 2016; S39

A case crossover study on the impact of heat waves on non-accidental deaths in Jinan, China

Jun Zhang[1],Shouqin Liu[1], Liu Yang[1], Yueling Liu[1],Ji Zhang[1]

Conflictos de interés: Los autores declaran no tener conflictos de interés alguno.

Abstract

Background: Heat waves can not only cause direct death from heat stroke but also lead to excess deaths due to other illnesses. Identifying contributing factors of population vulnerability to heat waves is particularly crucial because heat waves will affect the most disadvantaged populations aggravating health disparities. There has been little evidence on the risk of deaths from heat waves and associated contributing factors to the population vulnerability in Jinan. **Purpose:** To assess the impact of heat waves on non-accidental deaths and identify individual vulnerability factors to heat wave-related deaths in Jinan, China.

Study/Intervention Design: Case crossover study

Methods: Daily death data and meteorological data were collected for the summer months (May to August) of 2012-2014. Multivariate linear regression models were used to evaluate the increased risk of heat waves on deaths. A crossover analysis was then conducted to compare the characteristics of deaths from the heat wave (case group) period and non-heat-wave (control group) period. Univariate and multivariate logistic regression models were used to estimate the odd ratios (OR) of risk factors and their 95% confidence intervals (CIs). **Results:** The risk during heat wave days were much higher than non-heat wave days with OR of 12.73 (95%CI 7.05-18.41) for non-accidental deaths and 11.25 (95%CI 7.12-15.38) for deaths of circulatory diseases. The case-crossover analysis indicated that older people were more likely to die during heat waves (OR 1.184, 95% CI 1.068-1.313), more deaths occurred outside a hospital during heat waves (OR 1.105, 95%CI 1.009-1.210) and having a lower educational level also increased the risk of death from heat waves (OR 1.187, 95%CI 1.064-1324). **Conclusion:** Heat waves significantly increased the risk of non-accidental deaths. The risk factors identified in our study have implications for public health interventions to reduce heat-related mortality during extreme heat events.

[1]Jinan municipal center for disease control and prevention