

Contribution of Anthropogenic Factors and Climate Variables to Human Cystic Echinococcosis Mortality in Chile (2001-2011)

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Abstract

Here we assess the effect of weather and anthropogenic environmental variables, particularly urbanization, on cystic echinococcosis mortality in Chile from 2001 to 2011 using a nonparametric regression model, multivariate adaptive regression splines, and Poisson nonlinear regression models. This study integrated data from various sources on weather and anthropogenic variables. The canine population had the greatest influence on human cystic echinococcosis mortality during the period analyzed. Urbanization among anthropogenic variables and temperature and precipitation among the weather-related variables were the main factors related to cystic echinococcosis deaths. Deaths decreased with urbanization level. Temperature showed a nonlinear impact on mortality, with an optimum value similar to 11 degrees C. Public policies aimed at improving safe management of companion animal populations are crucial in controlling the spread of this disease. Effective animal management strategies would have wide-ranging public health benefits, advance the welfare of companion animals and livestock, and decrease the number of human cystic echinococcosis cases.

Palabras clave

Palabras clave de autor: [Echinococcus granulosus s; l](#); [mortality](#); [weather](#); [canine population](#); [urbanization](#); [zoonotic diseases](#)

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