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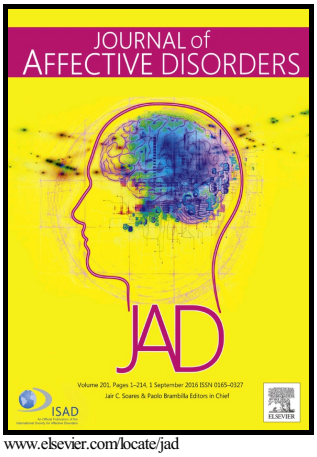

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Forecasting State-Level Premature Deaths from Alcohol, Drugs, and Suicides Using Google Trends Data

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Abstract

Background

Vital statistics on the number of, alcohol-induced death (AICD) drug-induced death (DICD), and suicides at the local-level are only available after a substantial lag of up to two years after the events occur. We (1) investigate how well Google Trends search data explain variation in state-level rates in the US, and (2) use this method to forecast these rates of death for 2015 as official data are not yet available.

Methods

We tested the degree to which Google Trends data on 27 terms can be fit to CDC data using L_1-regularization on AICD, DICD, and suicide. Using Google Trends data, we forecast 2015 AICD, DICD, and suicide rates.

Results

L_1-regularization fit the pre-2015 data much better than the alternative model using state-level unemployment and income variables. Google Trends data account for substantial variation in

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