OP-15
Using Google Trends for drug interest monitoring—correlating Google Trends data with Poison Centre calls for Nitrous Oxide

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Objective: To show how Google searches (obtained via Google Trends) can indicate whether drug users are accessing drugs via internet searching, and whether secular trends can be discerned in the data. In 2017, Australian toxicologists noticed an increase in nitrous oxide-related hospital admissions. Case reports[1,2] confirmed recreational use of nitrous oxide. A bulb of nitrous oxide gas is called a "nang" and websites sell whipped cream chargers in bulk, 24/7. These websites, and the 2017 EDRS[3] finding that 20% of respondents purchase drugs from the web, indicate that tracking searches on Google could serve as a proxy for nitrous oxide abuse (Google internet searches represent close on 83% of Australia's population[4]).

Methods: Data were extracted from Google Trends (GT) for various terms related to the use of nitrous oxide from 2004–2017 (GT data are only available from 2004). Data related to calls to the New South Wales Poisons Information Centre (NSW-PIC) were extracted for the same period. The correlation between the NSW-PIC calls and GT data for various terms was assessed using Pearson correlation coefficients.

Results: The results show how spurious terms (e.g., "Nanga Parbat") can be excluded to refine search queries, as well as how multiple terms can be combined. Searches for seven terms were extracted, and correlated—inter-correlations ranged from near zero to approximately 0.8 for non-contiguous terms (e.g., "cream charger" and "nangs"). Selected terms had strong correlations ($r=\pm0.7$) to the number of calls made to the NSW-PIC. A definite upward trend was seen in both calls to the NSW-PIC ($R^2=0.26$) as well as the search terms most strongly correlated with the PIC calls ("cream charger": $R^2=0.74$; "nangs": $R^2=0.54$).

Conclusion: The study provides detail about how GT data should be used. Methods for defining the correct set of search terms, and the ability to detect certain signals, are illustrated. The data correlated well with an objective measure for drug use, viz. PIC calls, and can thus serve to confirm such a trend. GT data's ability to predict future use alone, however, remains questionable.

References:

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