The Use of a Large Epidemiological Surveillance Dataset (SIVEP-Gripe) for the Generation of Scientific Evidence in Brazil on COVID-19: A Literature Review

Alvis Zakzuk NJ, Diaz-Quijano FA

Universidade de São Paulo. Programa de Posgraduação em Epidemiologia. Faculdade de Saúde Pública, São Paulo, Brasil

OBJECTIVE

Since the AH1N1 pandemic (2009), the Ministry of Health of Brazil gathers epidemiological data of severe acute respiratory syndrome (SARS) in the SIVEP-Gripe dataset. SIVEP-Gripe comprises >150 variables for patients with SARS who requires hospitalization. Since 2020, COVID-19 hospitalizations cases were included in SIVEP-Gripe. We aimed to describe the published evidence regarding to the use of SIVEP-Gripe for the COVID-19 study in Brazil.

METHODS

We conducted a literature review across two key databases (PubMed-Medline and Scielo) without time restriction, using the following search strategy: “COVID-19” AND “SIVEP-Gripe”. The preference languages searched were Portuguese and English. Data on topic, methodology and location were extracted from the included papers. Absolute and relative frequencies were used to describe the main results. Ryann, Microsoft Excel and Zotero were used to screen, gather, and analyze the studies. Text analysis was performed in R using tidyverse, tidytext, and wordcloud packages.

RESULTS

We found 67 articles. Fifty-five papers were included in the analysis after remove duplicates. Sixteen papers (27.6%) were conducted to estimate mortality risk factors due to COVID-19, 11 (19%) for maternal morbidity and mortality, 6 (10.3%) for children and adolescents, 3 (6.9%) for cardiovascular and autoimmune diseases. Twenty-five (43.1%) were descriptive studies, 43.1% were analytical ones, 5 (6.9%) were methodological (machine learning, imputation methods, Bayesian estimates) studies, 2 (3.5%) were burden of disease analysis, and the remaining systematic review and spatial analyses. Thirty-eight (65.5%) studies were performed at the national level, 12 (20.7%) at national and regional level, and the rest were for specific states or municipalities. Most used words in the included papers’ titles were “factors” (24.1%), “hospitalized” (24.1%), “patients” (20.7%), “mortality” (19%), “cohort” (17.2%), among others.

Table 1. Main topics of published papers using SIVEP-Gripe database

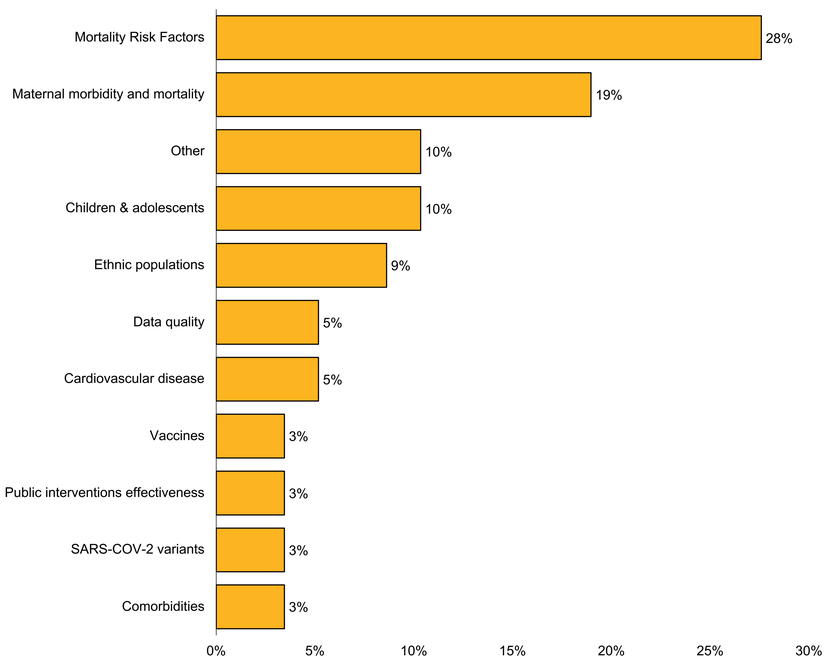

Figure 1. Wordcloud based on revised titles and abstracts of the included publications

CONCLUSIONS

This review illustrates the research applications of a large SARI dataset that may have uses for current and future health emergencies.

Contact

nzakzuk@usp.br

Laboratorio de Inferência Causal em Epidemiologia