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Can exploratory analysis of the "google trends - GT" guide or optimize measures in collective health? a brief analysis

Abstract

Occupational health needs to search for tools, data to adopt effective preventive health measures. Identifying and monitoring indicators of suicide, especially in times of absence caused by the pandemic, is a relevant action for public policies and can be triggered in the work environment. Aim:To analyze the behavior of research and consultations with the GT, together with data from the Ministry of Health – DATASUS (Brazil) on suicide mortality. Method : Descriptive and exploratory study. Period :2018 to 2020. Use Excell for analysis. Results: In an analysis with data search google trends, there was no strong correlation in the years 2018 and 2019 but in 2020 the correlation found. Conclusion : The effectiveness of GT in those areas show the potential of GT to be used when studying and monitoring suicide. Thus, we believe that a preventive approach based on analysis of data from internet trend surveys – google trend – can be used.

Keywords: suicide, google trends, occupational health, epidemiology

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Introduction

Occupational health needs to search for tools, data to adopt effective preventive health measures. Suicide is an important cause of mortality worldwide, with about 1 death every 40 seconds, according to the WHO. Workplaces are critical in suicide prevention because work-related factors can be associated with suicide, and because workplaces can be effective suicide prevention sites. Identifying and monitoring indicators of suicide, especially in times of absence caused by the pandemic, is a relevant action for public policies and can be triggered in the work environment. Understanding the circumstances associated with work-related suicides can advance worksite prevention efforts Information technology and the search for health information on the internet is increasing. Global, regional, and country statistics on population and health indicators are critical for assessing development and health progress and for guiding resource allocation, and WHO estimates of mortality and causes of death are very important.[1] The tool "Google Trends" (GT) can contribute to know the behavior about suicide. Can exploratory analysis of the "GT" guide or optimize measures in collective health?

Material and methods

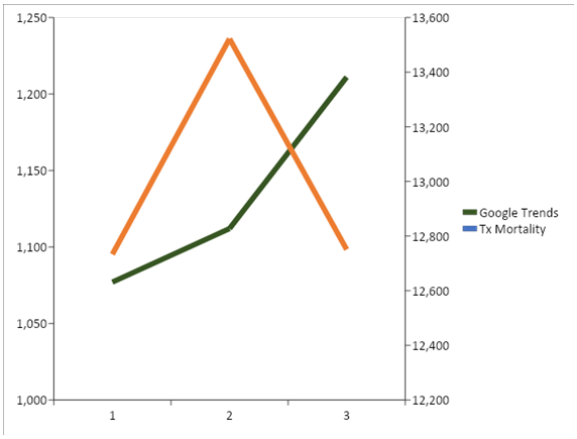
The behavior analysis for research and web surfing word interest with Google Trends and official dataset provide by Brazilian Health Ministry (DATASUS) on suicide mortality events system registrations. This study is a descriptive and exploratory study that is time located between 2018 to 2020. The analysis of population research on web surfing using the term "suicide" in Portuguese language and mortality in Brazilian Health System Database by international code for disease ICD 10: X60-X84. The Excel ® software for dataset processing. The Pearson Correlation was the mathematical method used for measure the association between these different dataset, finding the average of association between them. The data was analyzed by the year and place of occurrence of the events. These variables were the same between two different data tables, permitting to have a reasonable standard for data visualization for get some insights.

To analyze the behavior of research and consultations with the GT, together with data from the Ministry of Health – DATASUS (Brazil) on suicide mortality.

The following were analyzed: year of occurrence, place of occurrence.

Results

In Brazil Mortality rates in the years 2018 (12,733), 2019 (13,522) and 2020 (12,751) were similar. The household was the main place of occurrence (62%). In an analysis with data search google trends, there was no strong correlation in the years 2018 (-0.22) and 2019 (0.15), but in 2020 the correlation found was: -0.42. (Graph 1).



Graph 1 Analysis about Suicide in Brazil DATASUS and Google Trend 2018-2020.

Source: Datasus – M.S and Google Trends.

Discussion

The database from different realities can be connected. Considering some variables that are fixed and human dynamics are points to pay

attention to go deeper in other points for proofs connections. Maybe, sometimes, the data correlation could be a casual intersection due to time period syntonization. But there is a great amount of data because Health Management is the one of the greatest bases of the world and the Brazilian population uses the web more than 8 hours a day, one of the greatest web traffic of the world.

A systematic review identified 20,234 articles published between September 2005 and December 2019 about Improving Suicide Prevention Through Evidence-Based Strategies: A Systematic Review.[2] Our research identified correlation in year 2020. It is very important to adote preventive actions. Another research identified 1797 studies, including 23systematic reviews, 12 meta-analyses, 40 randomized controlled trials (RCTs), 67 cohort trials, and 22 ecological or population-based investigations.[3] In other regions, present state of suicide prevention in the region will require cross-country efforts that will generate a critical mass to move suicide advocacy in establishing national prevention strategies in the region.[4]

The great amount of data association is a point for confidence for further understanding for populational behavior, including moments of suffering of another such as health dynamics contact point. These evidences can be approached for another variables depending of the web user capture, referencing the necessity for ethics approach and health management attention for precise action for saving lives. Another study in Brazil found a statistically significant correlation between the variables studied for diseases dengue and yellow fever with Google trends. Pearson coefficient of 0.91 for dengue and 0.86 for yellow fever. Sensitivity was 87% and 90%, and specificity 69% and 78% for dengue and yellow fever, respectively.[5] We believe that these research and data reinforce the importance of using preventive analyzes as in our research, to discuss the issue of suicide.[6]

Conclusion

The use of GT has been shown to be effective when used in other areas, such as the correlations and variables used in disease studies. The effectiveness of GT in those areas show the potential of GT to be used when studying and monitoring suicide. Thus, we believe that a preventive approach based on analysis of data from internet trend surveys – google trend – can be used.

Acknowledgments

This study is dedicated for patient health that everyday health workers are intimately connected, an invitation for reflection and action for life saving in different levels inside the population mind.

Conflict of interest

This study does not have any conflict of interest.

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