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Correlation between New Daily COVID-19 Cases, New Daily Deaths and Google Trends for Masks in Algeria

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Abstract

The absence of effective drugs and vaccines against COVID-19 lead Algerian population to give more importance to hand hygiene and masks for reducing the transmission of COVID-19. These interventions were recommended by Algerian health authorities for fighting COVID-19 outbreak. Algerian population used internet as a source of knowledge. We used google trends relative searches volumes (RSV) of terms like "masques de protection" translated by masks from March 1st to March 31, 2020. We search the correlation between the daily new COVID-19 cases, daily new death and the google RSV trends concerning "masques" from March 1st to march 31, 2020.

Keywords: Google trends; Masks; Daily; Death; COVID-19

Introduction

As of May 24, 2020, the World Health Organization (WHO) reported 5201549 confirmed cases of COVID-19 and 337405 confirmed deaths. A total of 216 countries were concerned. On March 17, 2020, Algeria closed all land borders and suspended domestic flights. On March 18, 2020, Algeria announced that confirmed COVID-19 cases are quarantining within its borders. On March 22, all cultural, sporting and commercial events are suspended. Schools, universities, public transportation, restaurants and cafes (in large cities), public baths, event halls, are closed. Citizens were required to wear a mask when they are in public. Algeria reported 9,831 confirmed cases of COVID-19 and 681 confirmed deaths in its borders.

Algerian population seeks information on methods of fighting COVID-19. Google searches RSV reflected this matter. We like to study the relationship between daily new cases and daily new death COVID-19 cases and Google RSV Trends concerning masks, in Algeria during March, 2020.

Methodology

Google Trends are used online in .csv format. We used the absolute numbers for COVID-19 cases and deaths. We used Google searches (RSV) for "masques" during March 1st to March 31 among Algeria. We studied the correlation between Google Trends (RSV) for "masques" and daily new COVID-19 cases and daily new deaths among Algeria from March 1st 2020 to March 31, 2020. We used Spearman's test to measure the relation between google RSV for "masques" and daily new COVID-19 cases and daily new deaths.

Results

There is an association of public interest in coronavirus infections with actual number of daily new cases and daily new deaths for Algeria from March 1st 2020 to March 31. The peak of relative search volumes (RSV) for "masques" was reached on March 15, 2020 **(Figure 1).**
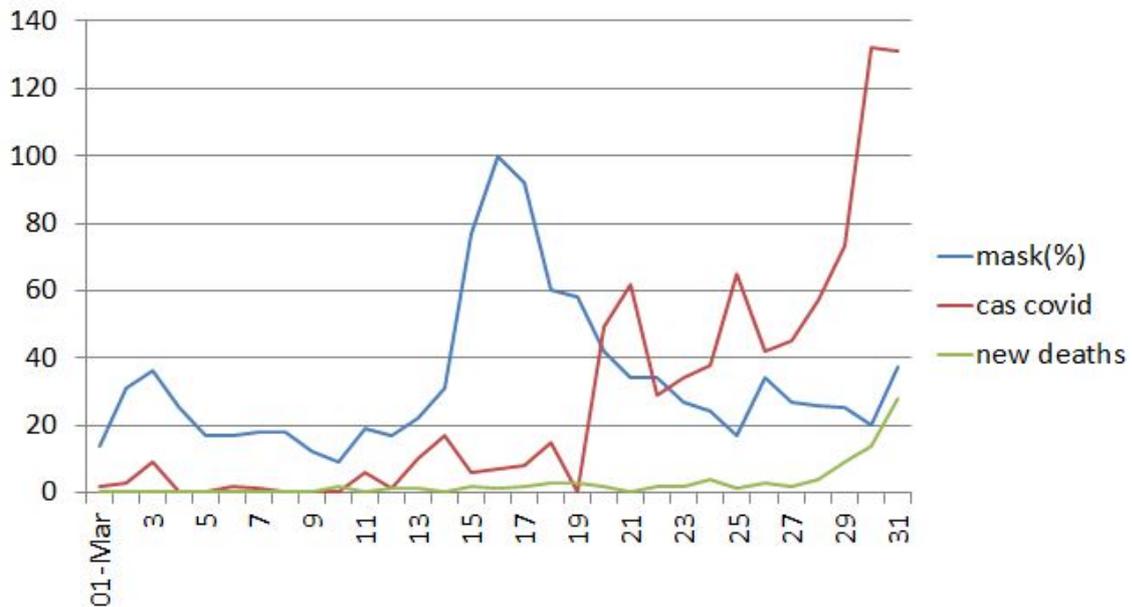
Figure 1 Relative search volumes (%) for masques (blue), new daily deaths (green) and new daily confirmed COVID-19 cases (red). March 2020 Algeria.

We find that RSV for "masques" from March 1-12 to March 1-21, correlated significantly with new daily COVID-19 cases. In the other hand, RSV for "masques" correlated in google searches for "masques" with new daily deaths from March 1-17 to March 1-21 **(Table 1 and Figure 2).**
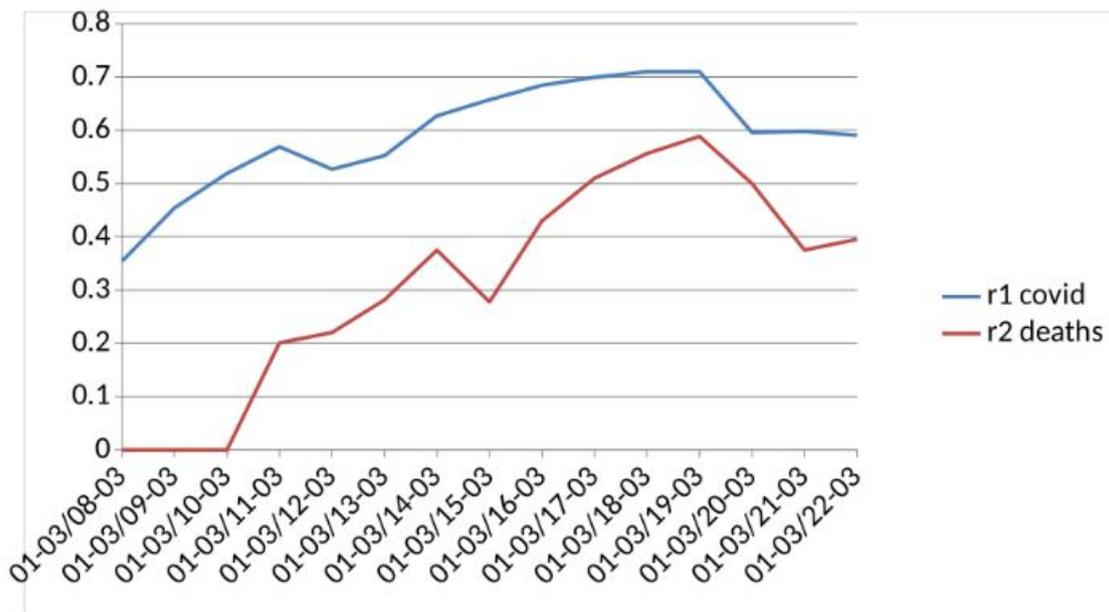

Figure 2 Pearson correlation coefficient (r) between daily new COVID-19 cases, daily new deaths and Google trends data in Algeria.

Figure 2 shows an increasing trend between new daily COVID-19 cases and new daily deaths and RSV for masks.

Table 1 Pearson correlation coefficient (r) between new COVID-19 cases and daily new deaths and Google trends data in Algeria.

Time frames	daily	cases	daily	deaths
	r	p	r	p
March 1-11	0.5889	0.067	0.2009	0.553
March 1-12	0.5268	0.007	0.2202	0.491
March 1-13	0.5522	0.053	0.2814	0.351
March 1-14	0.6270	0.016	0.3748	0.186
March 1-15	0.6572	0.007	0.2777	0.312
March 1-16	0.6845	0.003	0.4299	0.096
March 1-17	0.6993	0.001	0.5098	0.003
March 1-18	0.7098	0.000	0.5562	0.001
March 1-19	0.7098	0.003	0.5885	0.008

Discussion

Worldwide interest in coronavirus started on January 20th and reached its first peak on January 31st, a few days after the world was spread on the outbreak of Wuhan, China. The COVID-19 outbreak has been associated with internet search volumes for hand hygiene and masks [1]. Google Trends supplies a tool to monitor community interest [2].

In European countries, the highest relative search volumes peak was reached mid of March [1]. Algeria acted as many European countries in imposing measures for slowing the spread of the disease, and can exhibit nonexponential curves. In our study, Google trends data strongly correlates with daily new cases COVID-19 and new daily deaths. Google trends can prepare health care system for fighting COVID-19 outbreak.

Google research volumes trends were also studied to forseek the COVID-19 outbreak in countries like China, Iran and Taiwan [3]. Masks protect in high transmission settings and in crowded public spaces, including workplaces, buses, trains, planes and other closed settings. There is evidence supporting that masks give protection to community, healthcare workers and sick patients.

Masks and hand hygiene are more protective [4]. Community mask use by people is beneficial, for COVID-19, where transmission may be pre-symptomatic. Hand hygiene is a low-cost intervention that was recommended by international agencies to prevent COVID-19 infection. Madani et al. [5] shows that the half of his respondents has good hand hygiene in Algeria.

Conclusion

Google RSV trends can help to monitor the progression of an outbreak such as the current COVID-19 pandemic. Algeria takes measures for reducing the transmission of COVID-19.

Authors' Contributions

Study conception: Benabdellah Anwar.

Mansucript writing: Benabdellah Anwar.

Critical revision: Benmansour Z and Labdouni MEH.

Supervision: Benabdellah Anwar.

Declaration of Interest

None.

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