



Uncertainty in Health Emergencies: Communicating Risks During COVID-19 Response

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The world's fragmented response to the COVID-19 pandemic created fertile ground for mixed messages and inconsistency. The authors analyzed Google-trending insights from five countries (Italy, Spain, the United States, the United Kingdom, and France) across three-week time (1–23 March 2020) to document trends in population health anxiety in response to the initial global spreading of the outbreak. The results are expressed in the form of Uncertainty Index (UI), which reflects the total number of Google searches/COVID-19 prevalence and standardized per million inhabitants. The United Kingdom experienced the highest level of health anxiety (UI = 11.5), followed by France (UI = 4.6) and Spain (UI = 3.2). The United States suffered the highest rate of uncertainty in the early stage of the pandemic; the Italian population experienced a balanced level of anxiety. Institutionalizing risk communication during COVID-19 should represent an integral part of the country emergency response.

Keywords: risk, COVID-19, politics, communication, health emergencies

TO THE EDITOR

Institutionalizing risk communication represents an integral part of any emergency response.

Communicating risk during epidemics is critical in influencing public health strategies; hence, consistent and accurate information should be provided on time to the population (Miceli et al., 2017).

The COVID-19 pandemic situation has been particularly challenging as very little was known about the novel virus. Nevertheless, there seem to be large differences between individuals in terms of the perception of threat and the consequent fear (Fergus, 2015). Government sources of health information that are usually regarded as reliable because they provide accurate and unambiguous information were not necessarily perceived as authoritative and trustworthy when it comes to COVID-19. This crisis of confidence has been strictly related with diminished trust in political institutions during the pandemic, particularly when the adopted health policies of the governments openly contradict with recommendations provided by the World Health Organization or other relevant health agencies (Starcevic et al., 2020). For example, at the beginning of the pandemic, many governments refused the use of facemasks by the public due to a sense that their potential risks, such as self-contamination, could outweigh the potential benefits and that public use would lead to depletion of the supply needed for health-care workers. Systematic reviews of facemask use suggest relative risk (RR) reductions for infection ranging from 6 to 80%, including for betacoronavirus infection (e.g., COVID-19, SARS, MERS). This inconsistency resulted in fragmented public health measures implemented by the policy makers (type of facemask, cost, equity, acceptability, and

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FIGURE 1 | Uncertainty Index Per Country.

feasibility). While most Asian governments required the public to wear masks from the beginning of the pandemic, governments in Western countries disagreed with wearing masks until they faced a vertical increase in the numbers of people who became infected (Schünemann et al., 2020).

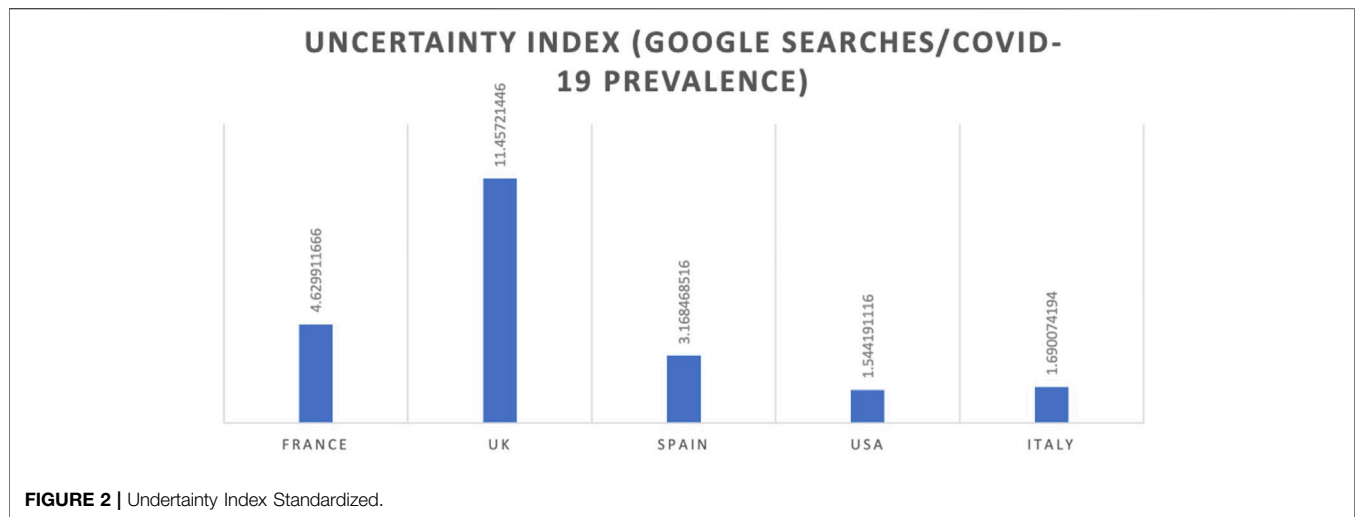
Cyberchondria (CYB) has been described relatively recently as a behavior characterized by excessive online searching for medical information that is associated with increasing levels of health anxiety (Vismara et al., 2020). A recent systematic review revealed that CYB showed a self-reported association with health anxiety, hypochondriasis, and obsessive-compulsive disorder (OCD) as well as other forms of problematic usage of the internet (PUI). The psychological mechanisms associated with CYB include anxiety sensitivity, intolerance of uncertainty, and pain catastrophizing.

A list of factors that contribute to cyberchondria have been identified. These include, among others, 1) a heightened perception of threat and fear of a newly identified and poorly understood disease, 2) lack of authoritative and trustworthy sources of relevant health information, and 3) inability of excessive online health information seeking to provide the

necessary information and deliver reassurance (Lauriola et al., 2019).

Assuming that compulsive search of a term on the internet may be taken as an indicator of uncertainty regarding a specific subject (Salkovskis et al., 2002), the authors analyzed Google-trending insights from five countries (Italy, Spain, the United States, the United Kingdom, and France) across three-week time (1–23 March 2020) to document trends in population health anxiety in response to the initial global spreading of the outbreak. The selection of these countries has been driven by two elements: 1) they faced similar epidemiological situation in the beginning of the pandemic period (e.g., Italy has been the first country in Europe where the virus has been isolated; the United States reported the highest death rate during that period of time); 2) government and public authorities' declarations on COVID-19 national health policies for these countries have been freely accessible online. However, the authors believe that this methodology could be further escalated and adopted by other countries.

Google Trends, an open data tool that allows users to interact with Internet search volumes for user-specified terms, has been



leveraged to determine the relative search volume for the term “coronavirus” performed on Google, normalized by the highest query share of word over the time-series (Hilger et al., 2019). Data have been then linked with the country COVID-19 confirmed cases/day¹. The results are expressed in the form of Uncertainty Index (UI), an original indicator reflecting the total number of Google searches/COVID-19 prevalence and standardized per million inhabitants.

The United Kingdom experienced the highest level of health anxiety (UI = 11.5), followed by France (UI = 4.6) and Spain (UI = 3.2) (Figures 1, 2). A large utilization of internet search activities characterized these countries, particularly in the earliest phase of the pandemic, regardless of COVID-19 incidence. Notably, time trend analysis indicates a decisive flattening of the uncertainty curves influenced by government declarations on COVID-19. On March 17, 2020, the Prime Minister Boris Johnson publicly urged the UK residents to comply with social distancing measures in response to the COVID-19 pandemic². The declaration had an immediate effect on the Google searches, causing a drastic UI fall (from 658, March 16, 2020–130, March 18, 2020; Figure 1).

Spain, which was in the observed period the second COVID-19 most affected country after Italy, passed a Royal Decree declaring the situation of emergency on March 14, 2020 (UI = 819).

Following the announcement, the Uncertainty Index dropped to 551, and since then, its values have stayed consistently below this level³.

¹Google Trends, Available at: <https://trends.google.com/trends/trendingsearches/daily?geo=SG>

²Guidance: what the coronavirus bill will do, Department of Health and Social Care (UK) Available at: <https://www.gov.uk/government/publications/coronavirus-bill-what-it-will-do/what-the-coronavirus-bill-will-do>

³Spanish Government, Real Decreto 463/2020, de 14 de marzo, por el que se declara el estado de alarma para la gestión de la situación de crisis sanitaria ocasionada por el COVID-19 <https://boe.es/boe/dias/2020/03/11/pdfs/BOE-A-2020-3434.pdf#BOE>

On March 16, 2020, France imposed lockdown to control COVID-19 transmission. The same evidence applies to the country, experiencing a 50% reduction on its UI influenced by the Prime Minister declaration⁴. Nevertheless, the French government pandemic communication strategy has been largely criticized as confusing and inconsistent.

The United States suffered overall the highest rate of uncertainty in the early stage of the pandemic, reaching unprecedented peaks of single user accesses (24.000, March 1, 2020, Figure 1)⁵.

Instead of governmental entities, news media companies played a central role to respond to public inquiries by creating specified question and answer sites on their websites, such as the Wall Street Journal’s (n.d.) “Coronavirus: You Ask, We Answer” site and CNN’s “You asked, We are answering” (Yan, Andrew, Mahtani, and Kaur, n.d.) sites (Kim and Kreps, 2020a).

However, the curve fell sharply around March 6, 2020, when President Trump (Schünemann et al., 2020) signed into law the COVID-19 Preparedness and Response Supplemental Appropriations Act (UI = 1.5, Figure 1).

Italy described the lowest differential interval in the uncertainty values across the time trend analysis (Figure 1). The Italian government and media have alternated between alarmism and premature signals of a return to normality. Concern about the economic difficulties created by the virus has initially pushed the government to take excessively light measures. Despite the resulting instability in government communications, which has disorientated the Italian public to some extent, the population appeared to experience a balanced level of anxiety that is consistently decreasing over time, possibly influencing the daily government updates on the emergency situation (Torri et al., 2020).

While there is no “one size fits all” communications strategy to deliver information during a prolonged crisis, in this article, we draw

⁴“We are at war”: France imposes lockdown to combat COVID-19. Available at: <https://www.channelnewsasia.com/news/world/covid-19-coronavirus-france-lockdown-macron-12544854>

⁵Worldometer, Available at: <https://www.worldometers.info/coronavirus/>

on key findings from five countries to highlight some fundamental characteristics of effective governmental crisis communication.

When public health professionals and medical advisors to the top leaders of many countries warned about the severity and global spread of COVID-19 and asked for urgent preparation at the national level in the early stage of the global pandemic, particularly in January and February 2020, top leaders of many countries often downplayed what the experts suggested, and the public health threats did not garner much governmental attention (Kim and Kreps, 2020b). This has led to the highest level of uncertainty across the population, which is reflected with the UI curves, flattening as a result of institutional leadership against the pandemic (implementation/adoption of national measures to fight COVID-19).

There are unequivocal lessons learned from the current COVID-19 pandemic: 1) in the context of responding to emergencies with public health implications, inconsistent information and conflicting data may have negative impacts on population anxiety; 2) as individuals are required to make decisions based on having incomplete information, emergency

risk communication activities can influence the perception of credibility of health authorities among affected populations, leading to confusion and unresponsive behavior; and 3) the effective integration of mechanisms for information sharing and communication coordination into national leadership structures for response to emergency events with public health implications is critical.

DATA AVAILABILITY STATEMENT

The original contributions presented in the study are included in the article/Supplementary Material, and further inquiries can be directed to the corresponding author.

AUTHOR CONTRIBUTIONS

All authors listed have made a substantial, direct, and intellectual contribution to the work and approved it for publication.

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