Informing the Public is Not Enough: Risk Perceptions and Risk Communication are Essential for Prevention in Times of COVID-19

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Basic information

Virus Information

Due to the COVID-19 pandemic, it is well established that coronaviruses are a group of disease causing viruses that infect mammals (including humans) and birds. These viruses are part of the Orthocoronavirinae, subfamily and the Coronaviridae family [1]. They are enveloped viruses with a positive-sense single-stranded RNA genome and a nucleocapsid of helical symmetry [2]. The genome size of these groups of viruses ranges from approximately 27 to 34 kilobases, a large genome among known RNA viruses [3]. The name coronavirus is derived from the Latin corona, meaning "crown", which refers to the characteristic appearance evocative of a crown or a solar corona around the virions when viewed under two-dimensional transmission electron microscopy, due to the surface being covered in club-shaped protein spikes.

Clinical and historic information

In humans, coronaviruses were discovered in the 1960s [4]. The most recent common ancestor of all coronaviruses has been estimated to have existed as recently as 8000 BCE (Before the Common Era), though some models place them as far back as 55 million years or more, implying long term coevolution with bats [5]. They cause respiratory tract infections that can rage from mild, such as some cases of the common cold (among other possible causes, predominantly rhinoviruses), to lethal, such as SARS, MERS and COVID-19 with a high mortality rate. Symptoms in other species vary: in chickens, they cause an upper respiratory tract disease, while in cows and pigs they cause diarrhea. Currently there is no vaccine or antiviral drugs specifically for the treatment of SARS-CoV-2 (COVID-19); therefore, social distancing is the best prophylaxis we have to deter the spread of the infection.

Epidemiology

The coronavirus COVID-19 is affecting 199 countries and territories around the world and two (2) international conveyances: The Diamond Princess Cruise ship harbored in Yokohama, Japan, and the Holland America's MS Zaandam Cruise ship [6]. The speed with which this virus spreads makes it worrying how the population understands the precautionary message from the authorities and the public health workers.

Figure 1 presents the data in the countries with the highest number of infections, the total number of recoveries and the total number of fatalities. In addition, the data for Puerto Rico was added. In this way, we have a clearer idea of the proportion of the development of the infection per countries. China the country of origin has a large proportion of recoveries. As the condition develops in other countries,

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we begin to see a pattern to recovery. Nevertheless, this recovery will depend on the public and population trends to maintain social distancing. How in these countries is the public internalizing the information provided by the government? What are they doing to prevent the spread of the infection? How the message I being understood?
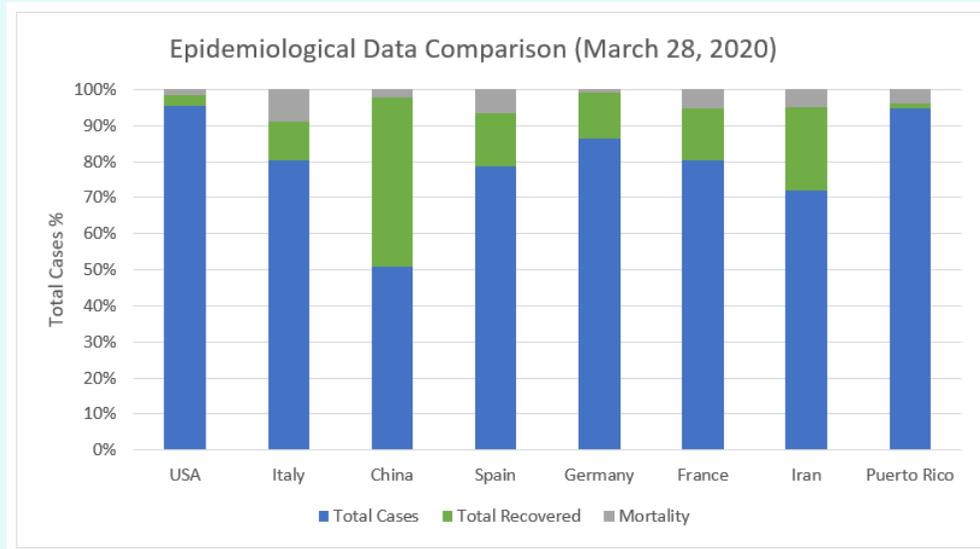

Figure 1

Risk perception

Risk perception and interpretation of scientific evidence is mediated by a several factors, including: education level, trust on communicators, information perception, type of data communicated, cultural and social aspects and individual priorities. Knowing this the Federal and Local government and authorities should identify which factors and communities will respond poorly to public health information.

Newly emerging contagious diseases have created a novel chance to examine how people perceive risk during an epidemic or a pandemic [7]. Therefore, the action or inaction of the government on risk communication will result in the level of concern and actions of the public. During this pandemic perceived risk can have a significant impact on precautionary behaviors that might affect disease transmission and mortality.

This pandemic will have two different responses: affective (risk as feelings) and cognitive (risk as analysis) [8]. Previous studies suggest that affective responses are quick, intuitive and automatic, while cognitive responses are slow, deliberate and calculative or rational. In the early phase of the outbreak, people may experience challenges when attempting to quantify the risk, which may lead to an affective response. In contrast, cognitive responses may occur during the late stage of the epidemic [9]. Most people may not conduct deliberate risk analysis when they deal with dearth of knowledge about risk; simple heuristics is what they will rely on. This heuristic processing is understood as a simple decision rule of thumb that can reduce the complexity of decision-making. When risk management decisions are needed, trust in the institutions, the government or administrators can be used as one of the heuristics [10]. People having confidence in the responsible risk manager, such as the government, may perceive less risk in a particular situation than people not having that confidence. Trust is known to be related to cognitive risk perception and to affective risk perception [11]. However, when assessing the influence of trust in risk perception, many studies have not distinguished between affective and cognitive reactions regarding contagious diseases during outbreaks.

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Risk communication

The objectives and processes of the media must be aligned with the interests of the community and with the initiatives of public health professionals. However, campaigns aimed at raising awareness about this and other health conditions generally use sober strategies that by themselves, do not maintain lasting changes. The first of these campaigns is that of argumentum ad metum or that appeal to fear. This term describes a persuasive or dissuasive technique that has the purpose of achieving an action or behavioral change in one or several people using fear. For example, if we want people not to throw garbage on the streets, we remind them that there is a $ 1000.00 fine for throwing garbage. Another approach that is used more superficially is that of positive reinforcement, a strategy that, according to some, may be more effective than the use of fear, but which also lacks perpetuity. Positive reinforcement brings, in citizenship, pleasant feelings that want to be repeated [12]. For instance, the campaign of singing or applauding on the balconies as a gesture of solidarity and invitation to stay at home or #PuertoRicoPrimero, #EsteVirusLoParamosUnidos evokes positive feelings in the participants, thus achieving, by their own will, the government directive to stay indoors, thus respecting the assigned quarantine. Both techniques, well known in psychology, the social sciences, marketing, and obviously public health, are often ineffective, on their own, in achieving the desired long-term behavior change in a population. Some of the problems with these strategies are the level of education of the population, the individual and collective beliefs of the citizenry, altruistic behaviors, the level of trust or mistrust in the country's leaders and the ease with which that is counted to spread the voice (accessibility to social networks) by the people. This then leaves us with the risk communication alternative. This modality is fundamental for health practices and essential for the success of any action aimed at protecting public health.

Risk communication is defined as an exchange of information in two directions between groups interested in knowing and contributing to the nature, significance and control of a risk [13]. In the public health context, this modality, assumes that a connection with the audience, answering questions and concerns, is as important as being able to offer the relevant health information needed to protect the public health. In this case, the public is seen as part of the solution and it is recognized that their expertise and experiences are essential for the search for alternatives. Nevertheless, to achieve this, it is necessary to have the trust of the population, take into account the level of real risk and respect the perception of risk that citizens have. This is accomplished if public health professionals and media that interact with the community are accessible and proactive; ready and develop key and concise messages that are emphasized during the information exchange. These groups (health professionals and communicators) must work together with the community and have the relevant information at hand, both from government authorities, and that responds to the interests of the community. The strategy is functional if the perceptual stages of risk are considered, which can be divided into precaution, dominate anger/frustration, effective communication in the crisis and connect with stakeholders. To address this, the World Health Organization (WHO) develops five (5) risk communication strategies that if followed will have an effective communication process. These are: building trust, communicating with the community early in the condition, being honest, respecting public concerns, and creating immediate and future action plans.

Final thoughts

Let us not forget that not following these steps and using non-professional internet pages and social networks represent the possibility of spreading unsubstantiated rumors about the health risk, promoting disinformation and fear. However, the proper use of the internet and social networks also represent new opportunities to communicate health messages and reach citizens more immediately.

Time and experience help us gain more insight into the epidemiology of disease and its impact on regions, countries and the globe. However, the benefit of learning, forces us to educate ourselves and this, in turn, requires continuous effective communication with all the groups involved.

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