The Danger of Misinformation in the COVID-19 Crisis

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Misinformation is a powerfully destructive force in this era of global communication, when one false idea can spread instantly to many vulnerable ears.

The SARS-CoV-2 pandemic is the first of its kind during this modern age of technology. Past pandemics have similarly affected millions, but constant media coverage regarding COVID-19 has placed this crisis at the forefront of our hearts and minds. The pandemic has become the backdrop for a political battle, with leaders clashing over public policy as well as interpretations of medicine. Providers are overwhelmed by an onslought of medical literature, along with pressure from the media and the community to navigate the unknown
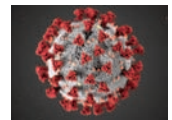
with precision. Likewise, the public is bombarded with information from often unreliable sources. Misinformation is a powerfully destructive force in this era of global communication, when one false idea can spread instantly to many vulnerable ears.
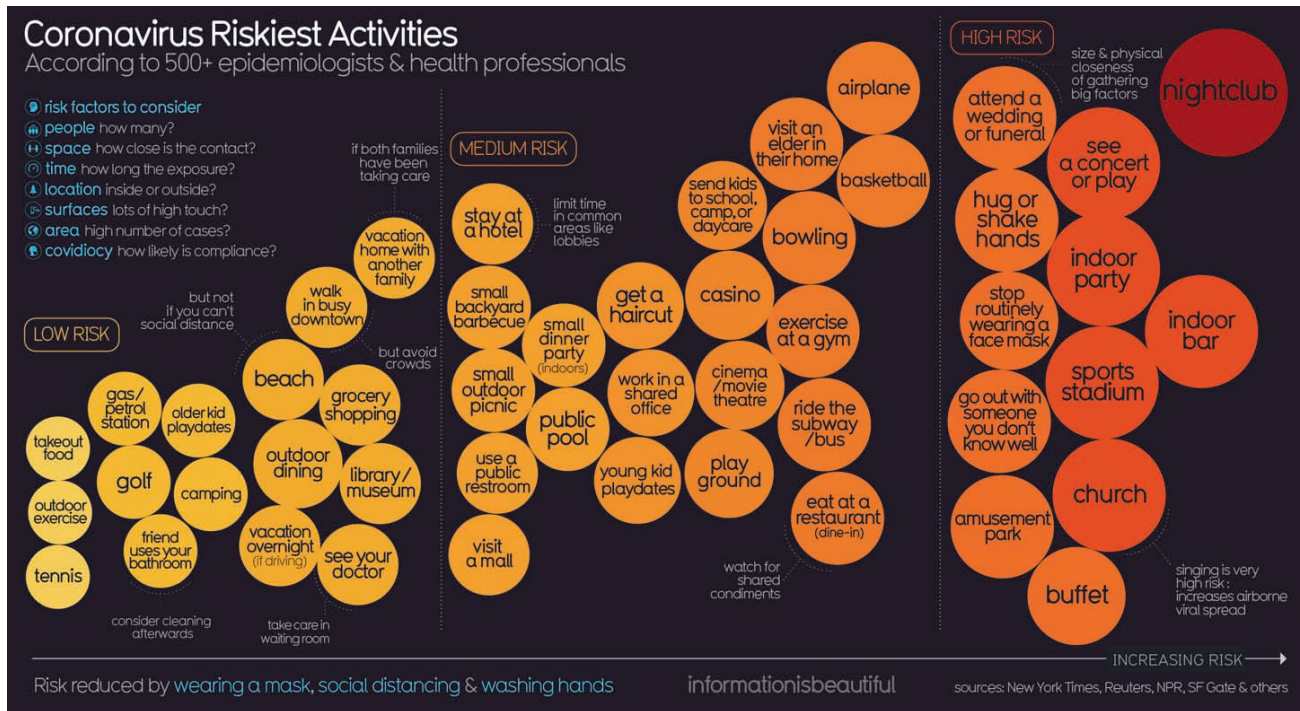
Threats to the Individual

Mental health professionals have noticed trends in coping mechanisms during the pandemic, even without the compounding issue of misinformation. Some patients feel a sense of foreshortened future, a common symptom after trauma. Many have experienced symptoms of depression and grief. Additionally, while the pandemic has been a shared global experience, there is an increasing sense of isolation and loneliness.

Misinformation further aggravates an already complex emotional situation. Healthcare providers are not immune to these effects. A recent study evaluated mental health effects of COVID-19 in over 1,200 Chinese healthcare workers. Over 70% reported psychological distress, with symptoms including anxiety, depression, and insomnia.[1] These traumatic emotional effects are heightened by conflict, confusion, and conspiracy theories circulating in the news media and online.

Several well-publicized incidents have demonstrated the negative impact of false information. As an example, early during the pandemic, questions were raised regarding the possible use of disinfectants administered internally to patients with COVID-19. On June 5, the Centers for Disease Control (CDC) reported a steep increase in calls to poison centers regarding exposure to household disinfectants.[2] A CDC survey of 502 adults in the United States found that 39% of responders engaged in dangerous practices including washing food products with bleach, applying household

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ONE PICTURE = 1,000 WORDS

Coronavirus Riskiest Activities — According to 500+ epidemiologists & health professionals

cleaners directly to skin, and intentionally inhaling or ingesting disinfectants with the goal of preventing COVID-19 infection.[2] Another troubling issue secondary to heightened anxiety is the substantial decline in visits for chronic conditions, preventative care, and non-COVID associated medical emergencies which was especially prominent early on during this pandemic. The fallout from delayed care may extend well beyond the current global crisis.

Beyond the physical and psychological consequences of misinformation, confusion can trigger actions based on fear. Fear has been a palpable sensation throughout this pandemic, and is often amplified when trusted authorities promote inconsistent opinions. Chloroquine and hydroxychloroquine were initially have been proposed as potential therapies for SARS-CoV-2 infection. A small trial in France suggested hydroxychloroquine plus azithromycin may be beneficial for treatment of COVID-19.[3] Other researchers have investigated these drugs, with variable results, prior to robust research displaying lack of benefit. One study from Brazil assessed safety of low- versus high-dose chloroquine in patients with COVID-19. Early unfavorable results showed deaths in both groups,[4] prompting the son of the Brazilian president to accuse the authors of conflicting political motivations on Twitter. Consequently, the principal investigator received multiple death treats necessitating police protection.[5]

Threats to the Medical Literature

The hydroxychloroquine debate in the spring has also highlighted the issue of misinformation in medical literature. A recent publication in *The Lancet* associated use of hydroxychloroquine or chloroquine with several harmful outcomes.[6] Three days after publication, the World Health Organization (WHO) abruptly halted hydroxychloroquine use in its Solidarity trial, based primarily on data from this observational study. However, the study methods and reliability of data were quickly brought into question by many external experts. After numerous inconsistencies were identified, *The Lancet* study was retracted.[7] The WHO subsequently resumed
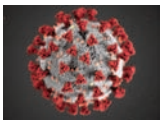
hydroxychloroquine trials for a time. During a global health crisis, research is of utmost importance. The need for rapid research has led to relaxation of normally rigorous academic evaluation, with pre-prints often published before peer review. Peer review is crucial in academic scholarship, and the standards of publication must be maintained even when data is desperately needed.

Physicians may fall prey to misinformation in this way. As new data is published hourly and guidelines are ever-changing, there is potential for doubt in the validity of manuscripts from previously trusted journals. Uncertainty can be stressful while caring for COVID-19 patients, but may also increase general stress as a trusted healthcare professional during these unprecedented times. When we are unsure how to educate ourselves and our patients amid questionable literature, this can affect the mental wellbeing and confidence needed to perform at our best.

Social Media Amplifies Misinformation

A unique feature of the COVID-19 pandemic is the effect of social media. Researchers from Stanford University have developed a model to understand the spread of misinformation in social media, ironically, like a virus.[8] It evaluates individuals' "susceptibility" to false information, and their likelihood to spread it to others. The elderly, youths, those active on social media, and those with fewer years of formal education appear to be the most susceptible to misinformation. Repeated exposures may increase susceptibility. Individuals at political extremes are also more likely to believe information that confirms pre-existing biases. This effect is of particular concern when the information comes from a trusted source.[8]

Many organizations are attempting to counter false information and raise awareness of this issue.[9] It is difficult to keep pace with the instantaneous communication provided by social media, and falsehoods continue to spread. With time, some individuals have become desensitized to the dangers of SARS-CoV-2 and are increasingly disregarding public health guidance.

Controversial opinions from medical professionals are frequently widespread in the media. The circulation of misinformation is not the root of all problems, but shifting the focus from fiction to fact will positively impact all involved.

Conclusion

As healthcare providers, we must acknowledge the problem of misinformation and its potential consequences. We have a duty to be transparent, and to educate ourselves with a critical eye. As we look ahead to the development of further treatments and vaccination for SARS-CoV-2, careful testing and peer-reviewed study will be essential. Physicians are trusted by many, and before sharing our ideas and opinions, we should be informed by the highest quality data available. This responsibility to disseminate reliable information extends to public health officials, social influencers, and civic leaders whose words may reach the ears of many.

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