

Technical Report 14



COVID-19 pandemic versus 'infodemic': the lesser evil

Dharshini Kantharuban¹, Indumini Gunatilake², Chithramali Rodrigo³, Bhumini Karunarathna³, Ishanka Talagala³, Sampatha Goonewardena⁴, Pushpa Jayawardana⁵, Maheeka Seneviwickrama^{4*}

¹ Provincial Director of Health Services office, Eastern Province, Trincomalee, Sri Lanka; ² Postgraduate Institute of Medicine, University of Colombo, Sri Lanka; ³ Ministry of Health, Sri Lanka; ⁴ Department of Community Medicine, Faculty of Medical Sciences, University of Jayewardenepura, Sri Lanka; ⁵ No affiliation

*Correspondence: maheeka@sjp.ac.lk

 <https://orcid.org/0000-0002-4182-284X>

DOI: <https://doi.org/10.4038/jccpsl.v26i0.8356>

Received on 20 May 2020

Accepted on 25 May 2020

Highlights

- Any health crisis is prone to create a lot of misinformation, termed “infodemic” in the current context.
- Current technological advancement facilitates the spread of misinformation much faster.
- Public health community plays a major role in educating media to spread the correct information during a health crisis.

Background

Myth is defined as misbelief, fallacy or misconception widely practised or believed in a background of one's own culture and belief system which cannot be explained by a scientific proof or a solution. This can be a traditional story, especially one concerning the early history of people or explaining a natural or social phenomenon, and typically involving supernatural beings or events (1).

The bitter truth with any health crisis is the ability to generate its own pandemic of misinformation termed as “infodemic” (2). This is worse during the early stages of the illness, where scientific information

regarding the disease epidemiology or pathophysiology is scarce. COVID-19 pandemic is not an exception; hordes of myths circulating faster than the facts creating a panic-stricken situation globally. Due to social media, these myths spread like wildfire around the world at a rate much faster than the virus itself (3-4). During an outbreak, authorities need to ensure that the public will adhere to the guidelines issued to control or minimize its impact (2).

Lack of awareness among the public regarding methods to cross-check facts is another issue. Recently in Iran, many people died following consumption of industrial strength alcohol which is purely due to believing false information on the

ability of alcohol to kill the virus in the body (3). Therefore, the scientific community, public health experts and the media should act faster to fill the information gap to make public act appropriately (2). The challenge is fighting simultaneously against two contagions, the pandemic and the much faster infodemic.

COVID-19 related myths and facts

Some of the myths circulating across the borders regarding COVID-19 and the facts are listed below:

A. Myths and facts about temperature and COVID-19 (5)

- *Myth:* Exposure to the sun or to temperatures higher than 250 C prevent the COVID-19
Fact: Exposing to higher temperature does not prevent COVID 19 infection. Even tropical countries with temperature more than 300°C have reported cases of COVID-19

- *Myth:* SARS- CoV-2 virus cannot be transmitted in areas with hot and humid climates.

Fact: From the available evidence, SARS-CoV-2 virus can be transmitted in all geographical regions, including areas with hot and humid weather such as in tropical countries.

- *Myth:* Cold weather and snow can kill the new coronavirus.

Fact: There is no evidence to believe that cold weather can kill the new coronavirus. The normal human body temperature remains around 36.5°C to 37°C, regardless of the external temperature or weather.

- *Myth:* Taking a hot bath can prevent the new coronavirus disease.

Fact: Hot bath will not protect from catching SARS-CoV-2 infection. The normal human body temperature remains around 36.5-37°C, regardless of the environment

temperature. Taking a bath with extremely hot water can cause scalding.

- *Myth:* Hand dryers are effective in killing the new coronavirus

Fact: Hand dryers are not effective in killing SARS-CoV-2. Frequent cleaning of hands using alcohol-based hand rubs or using water and soap to wash is recommended to protect from SARS-CoV-2.

B. Myths and facts about food and COVID-19 (5)

- *Myth:* Drinking alcohol protects against COVID-19.

Fact: Frequent or excessive alcohol consumption can increase the risk of health problems. Drinking alcohol does not protect against COVID-19 and can be dangerous since it can weaken the immune system thus increasing the risk of being infected (6).

- *Myth:* Eating meat can cause COVID-19 infection,

Fact: The new coronavirus is a respiratory virus which spreads primarily through droplets generated when an infected person coughs or sneezes, or through droplets of saliva or discharge from the nose. Avoidance of consumption of nutritious food act as a vicious cycle since it can lead to undernourishment and lowered immunity in the body, making someone more susceptible to infection. Maintenance of proper food handling habits including thorough cooking and proper cleaning of hands and utensils that came into contact with raw meat helps to prevent meat-borne infections.

- *Myth:* Eating garlic helps prevent infection with the COVID-19.

Fact: Garlic is a healthy food that has some antimicrobial properties. However, available evidence is not sufficient to claim protective effects against SARS-CoV-2 virus.

- *Myth:* Adding pepper to soup or other meals can prevent or cure COVID-19.

Fact: Scientific evidence is not available to recommend adding pepper in food to prevent or cure COVID-19.

C. Myths and facts about disinfectants and COVID-19 (5)

- *Myth:* Ultraviolet disinfection lamp will kill SARS-CoV-2 virus.

Fact: There is no evidence to believe that ultraviolet irradiation kills SARS-CoV-2 virus. Sterilizing hands or other areas of skin by ultraviolet radiation can cause skin irritation.

- *Myth:* Spraying alcohol or chlorine over the body will kill SARS-CoV-2 virus.

Fact: Spraying alcohol or chlorine over the body will not kill the SARS-CoV-2 virus that has already entered the body. Spraying such substances can be harmful to mucous membranes (i.e. eyes, mouth) and can cause skin irritation. Both alcohol and chlorine are useful to disinfect contaminated surfaces.

- *Myth:* Regularly rinsing nose with saline can help in preventing infection with SARS-CoV-2 virus.

Fact: At present, no evidence to prove that regular nasal rinsing with saline has protected people from infection with SARS-CoV-2.

- *Myth:* Drinking or injecting disinfectants can kill SARS-CoV-2 virus.

Fact: There is no scientific evidence to suggest SARS-CoV-2 virus can be killed by drinking or injecting disinfectants. Disinfectants are made with harmful chemicals that are not intended for human consumption therefore they can be very dangerous and can cause even fatal outcomes.

D. Myths and facts about treatment options and COVID-19 (5)

- *Myth:* Specific medicines are available to prevent or treat SARS-CoV-2 virus

Fact: There is no specific medicine recommended to prevent or treat SARS-CoV-2. Several clinical trials are under investigation for specific treatment.

- *Myth:* Antibiotics are effective in preventing and treating SARS-CoV-2 virus

Fact: Antibiotics will work only against bacteria. The SARS-CoV-2 is a virus and, therefore, antibiotics will not be effective in prevention or treatment of SARS-CoV-2.

- *Myth:* Vaccines against pneumonia can protect against the SARS-CoV-2 virus

Fact: Pneumococcal vaccine and Haemophilus influenza type B (Hib) vaccine, which are against pneumonia do not provide protection against SARS-CoV-2. Currently scientists are doing research to develop a vaccine against SARS-CoV-2.

- *Myth:* Being able to hold breath for 10 seconds or more without coughing or feeling discomfort means free from COVID-19 infection.

Fact: There is no scientific evidence that holding breath can be used as a test to diagnose SARS-CoV-2 infection. The best way to confirm is with a laboratory test.

- *Myth:* Hydroxychloroquine is a licensed drug for the treatment and prevention of COVID-19.

Fact: Currently scientific evidence is not sufficient to claim the effectiveness of hydroxychloroquine or any other drug in the prevention or treatment of SARS-CoV-2. The misuse of hydroxychloroquine can cause serious side effects and can be fatal.

E) Miscellaneous myths and facts about COVID-19 (5)

- *Myth:* SARS-CoV-2 virus affects elderly people only.

Fact: People of all ages can get infected by the SARS-CoV-2. COVID-19 related morbidity and mortality were found to be higher among elderly and people with pre-existing medical conditions (such as asthma, diabetes and heart disease).

- *Myth:* 5G mobile networks spread COVID-19 infection.

Fact: There is no scientific evidence to show SARS-CoV-2 can travel via radio waves/mobile networks. Disease is reported in many countries that do not have 5G mobile networks.

- *Myth:* SARS-CoV-2 virus is transmitted through mosquito bites.

Fact: There is no evidence to suggest that the SARS-CoV-2 could be transmitted by mosquitoes. The new SARS-CoV-2 is a respiratory virus which spreads primarily through droplets generated when an infected person coughs or sneezes, or through droplets of saliva or discharge from the nose.

- *Myth:* Thermal scanners can detect people infected with the SARS-CoV-2.

Fact: Thermal scanners are effective in detecting people who have developed a fever irrespective of the causative organism. Therefore, it is a non-specific screening method to detect patients with fever. However, thermal scanners are not effective in asymptomatic patients or patients who have taken antipyretics or during the incubation period.

Public health implications

Understanding the myths which are circulating in the region is important to plan and design effective risk

communication strategies. If the risk communication is carried out considering the myths circulating and the cultural background, health messages will be delivered effectively to the target population. This is an important strategy in preventive medicine. The Public needs to be informed with correct facts for them to practice the correct prevention methods, and not with myths or false information which will create more panic, harm and outbreaks in certain pockets. Change in preventive and curative measures based on pandemic stage and the findings of the ongoing research also leads to confusion among the public as well as the healthcare workers.

Gaps in the existing knowledge

Epidemiological studies to identify risk factors and protective factors are still being carried out. Effective preventive and treatment options, especially antivirals and vaccines are still at the trial stages. Numerous claims on effectiveness of traditional treatment modalities to cure COVID-19 is yet to be proven scientifically.

Applicability to Sri Lanka

In Sri Lanka, rapid spread of myths leading to more COVID-19 related panic, confusion and spread of disease among the general population was reported during the past five months. With reporting of the Chinese woman as the first case in Sri Lanka, there were several discrimination incidents reported against foreign nationals especially Chinese (7-8). Unethical reporting of media also raised concerns leading to discrimination against certain ethnic minorities, expatriate workers, patients and their contacts resulting in non-disclosure of the contact history. This resulted in unnecessary panic among health workers and closure of healthcare units for quarantine (8-10). Authorities had to issue guidelines on reporting of COVID-19 patients on several occasions (10).

Incident of the first COVID-19 cluster in Jaffna was ironically related to attending a special mass conducted to 'heal corona' by a pastor who was later found to be disease positive is an example of public ignorance regarding the disease. This resulted in

complete lock down of Jaffna district and arousal of anger and hate speech against the religion itself (8). Behaviour of certain responsible authorities has sometimes become questionable; Department of Indigenous Medicine of the Colombo Municipal Council, a government institute distributing a concoction of local herbal extracts including rasakinda, iriweriya, veniwelgata, cinnamon bark and perum kayam (asafoetida) claiming its immunity enhancing property to protect against corona infection without any scientific evidence is one such example (11). Certain politicians and health professionals have endorsed various treatment modalities without scientific evidence adding further to the confusion (8). Government decision on mandatory cremation of patients died of COVID-19 led to anguish among certain religious communities fuelled by a key political leader and the media response followed (12). Proper explanation of the situation was instrumental in mitigation of this issue. Several people have been arrested over the last three months under the charge of spread of corona related false information. Majority related to the social media posts (8, 13).

Recommendations

Development of more target-oriented health messages and conduction of awareness programs need to be carried out at field level to enhance public health literacy related to COVID-19 and to alleviate their panic status. Making journalists and the public aware of the ways to cross-check the information they receive can also reduce sharing of false information. Implementation of legal provisions against media and individuals who promote ideas that can mislead the public on COVID-19 is another timely needed important measure to combat the infodemic.

Author Declaration

Author contributions: DK drafted the manuscript. MS revised the manuscript for important intellectual content and other authors helped with literature search. All authors agreed to be accountable for all aspects of the work and approved the final manuscript for submission.

References

1. Cambridge Dictionary. *Meaning of myth*. The Cambridge Dictionary, 2020. Available from: <https://dictionary.cambridge.org/dictionary/english/myth>.
2. Zarocostas J. How to fight an infodemic. *The Lancet* 2020; 395(10225): 676. DOI: 10.1016/S0140-6736(20)30461-X.3.
3. Robson D. *Why smart people believe corona virus myths*. BBC Future, 7 April 2020. Available from: <https://www.bbc.com/future/article/20200406-why-smart-people-believe-coronavirus-myths>.
4. Depoux A, Martin S, Karafillakis E, Preet R, Wilder-Smith A & Larson H. The pandemic of social media panic travels faster than the COVID-19 outbreak. *Journal of Travel Medicine* 2020; 27(3): taaa031. DOI: 10.1093/jtm/taaa031.
5. WHO. *Coronavirus disease (COVID 19) advice for the public: myth busters*. World Health Organization 2020. Available from: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/myth-busters>.
6. WHO. *Alcohol and COVID-19: what you need to know*. World Health Organization 2020. Available from: http://www.euro.who.int/data/assets/pdf_file/0010/437608/Alcohol-and-COVID-19-what-you-need-to-know.pdf.
7. Husain J. China unofficially raises concerns over its citizens facing discrimination in Sri Lanka. *News Asia*, 1 February 2020. Available from: <https://newsin.asia/china-unofficially-raises-concern-over-its-citizens-facing-discrimination-in-sri-lanka/>.
8. Wikipedia. *2020 coronavirus pandemic in Sri Lanka*. Wikipedia. Available from: https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Sri_Lanka#10%E2%80%9323_March_2020.
9. Mahmud H. *Anti-Muslim Hatred: Clouding The Fight Against Corona!* Colombo Telegraph, 2 April 2020. Available from: <https://www.colombotelegraph.com/index.php/anti-muslim-hatred-clouding-the-fight-against-corona/>.
10. Ayub MSM. *Coronavirus and invasion of privacy*. Daily Mirror, 1 May 2020. Available from: http://www.dailymirror.lk/opinion/Corona_virus-and-invasion-of-privacy/172-187540.

11. Pothmulla L. *New Coronavirus: CMC introduces syrup powder to boost immunity*. Daily Mirror, 30 January 2020. Available from: http://www.dailymirror.lk/breaking_news/New-Coronavirus-CMC-introduces-syrup-powder-to-boost-immunity/108-182145.
12. Qazi S & Thasleem A. *Anguish as Sri Lanka forces Muslims to cremate COVID-19 victims*. Aljazeera, 3 April 2020. Available from: <https://www.aljazeera.com/news/2020/04/anguish-sri-lanka-forces-muslims-cremate-covid-19-victims-200403053706048.html>.
13. Vidarshana V. *Sri Lanka government intensifies crackdown on social media*. World Socialist Web Site, 9 April 2020. Available from: <https://www.wsws.org/en/articles/2020/04/09/medi-a09.html>.