

Fake news – CoV: viral misinformation in the time of an epidemic



Edsel Maurice T. Salvana, MD, DTM&H, FIDSA

March 24, 2020

etsalvana@up.edu.ph

Nothing scares people more than fear of the unknown. When a mysterious pneumonia started infecting people out of Wuhan, China in December 2019, health authorities initially announced that there was no evidence of human-to-human transmission and that most cases were linked to a seafood market selling wild animals (1). By early January 2020 it was apparent that the epidemic was spreading and that initial reports of no human to human spread were clearly wrong.

This situation where authorities and experts make a statement based on presumably best evidence which later changes sets them up for criticism and undermines their credibility as the situation evolves. Worse are accusations of a cover-up and lack of transparency on the part of the government that puts them on the defensive and increases overall anxiety. As the system becomes stressed, mistakes are made, further affecting public trust and resulting in a climate of suspicion and a desire for other sources of information.

With the advent of social media, there has been an unprecedented spread of poorly curated information, which is amplified in a public health emergency. Conspiracy theories already abound in times of normalcy, but these become more attractive to people who are convinced the government is withholding information from them. In addition, the jargon and technical terms that scientists and physicians use are easily misinterpreted by mainstream and social media, resulting in panicked reactions that are difficult to reverse once the information goes viral.

There are many instances during the current epidemic where incorrect or misinterpreted information has fueled an adverse reaction from the public and eroded trust in health authorities. Three examples are cited below:

1. The HIV link – an analysis of the genome of SARS-CoV-2 in a preprint on BioRxiv showed genes “in common” with HIV, leading some netizens to conclude that nCoV was “bioengineered” and had pieces of HIV in it (2). Some also pointed out that since Thailand was using protease inhibitors for nCoV, this belied its HIV origins. The authors promptly withdrew the paper, but the damage had been done.
2. SARS-CoV-2 goes “airborne” – a statement from the Shanghai Civil Affairs Bureau talked about “aerosol” transmission of the virus in hospitals. This was misinterpreted as “airborne” by mainstream media without realizing the technical use of airborne as suspended respiratory particles in air that can travel for large distances (3). While airborne transmission can occur in hospitals during aerosol producing procedures such as suctioning, the main mode of nCoV transmission is droplet – which refers to relatively large respiratory droplets that travel only up to 3 feet. It doesn’t help that respiratory droplets can go “airborne” when someone sneezes generating an “aerosol” but ultimately it is the size of the particle that determines whether it remains suspended in the air.

3. 24-day incubation period for SARS-CoV-2 – another preprint on Medrxiv involved a retrospective study of patients and reported an incubation period of up to 24 days (4). This was carried widely by mainstream media and alarm was raised on the validity of the 14-day quarantine period. Upon reading the paper, the stated range is 0.0 to 24 days, with a median of 3. This implies that the 24 days is likely an outlier. In addition, due to the retrospective nature of the study, a 24-day incubation period may be because of a separate illness, or an overlapping respiratory infection. This would be impossible to validate since specimens were not collected at the start of the symptoms.

A study recently pointed out that one of the most effective ways in combatting medical misinformation is when physicians and other experts weigh in on the topic (5). Unfortunately, most specialists are not particularly savvy with either social media or mainstream media. Here are several best practices that can equip experts to face mainstream media and help combat fake news:

1. Media people already have a story in their heads even before they interview you

In some cases they are just looking for a quote to validate their story. This is why physicians frequently find themselves cited out of context. You could give a one-hour interview, but they only take a 30-second clip to support their story which may be skewed towards a sensationalist point. To prevent this, ask the reporter or interviewer what their “angle” is so you can better express your point and guard against being made to say what they want. If possible, ask to see the final product before it is published or aired.

2. Keep your answers short

The longer your answer, the higher the risk of misinterpretation. If it is a complex thought, break it up into small sentences or answers. Avoid jargon and use metaphors to illustrate complicated ideas. If it is possible to give a definitive answer, then do so. If it is not, then use modifiers that reflect the quality of the evidence. Saying something MAY cause a disease is vague and you will not come off as authoritative. Say that it **most likely** causes disease, or it is **unlikely** that it causes disease. People look to experts for opinions, not for discourse. Therefore, a

built-in direction guides the public closer to the truth.

3. Verify, verify, verify

If you engage in social media, always check your sources. One bad reference can destroy your credibility and can come back to haunt you in the future. Information on social media is time-sensitive and responding to misinformation promptly can prevent a lot of harm. If evidence is evolving, it helps to give a time frame: “This is what we know at this time,” so you won’t be attacked with evidence that emerges after you post. Avoid sharing or retweeting social media posts without carefully verifying the content because, as an identified expert, it may come out as an endorsement. An infectious diseases physician recently shared a social media post and it started going around on the Viber platform with her identified as the author of the erroneous post. When confronted, she admitted she had shared it but denied she had authored it.

There are many more strategies for scientists and physicians to engage media and social media, but these are among the most important. Jumping right in when potentially problematic news emerges is much more effective than waiting for authorities to respond. Due to the chain of command, health authorities and institutions are not agile in responding to misinformation that spread in real time. Having real experts on the frontline combatting misinformation can be an essential tool in public health. Scientists already have the knowledge and the motivation. They just need the requisite media skills to apply them.

REFERENCES

- Gander K. Corona virus could be airborne, Chinese official claims. Newsweek (online). 2/10/2020 <https://www.newsweek.com/coronavirus-could-airborne-chinese-official-claims-1486493>
- Pradhan P, Pandey Ak, Mishra A, et al. Uncanny similarity of unique inserts in the 2019-nCoV spike protein to HIV-1 gp120 and Gag (withdrawn). <https://www.biorxiv.org/content/10.1101/2020.01.30.927871v1>
- Schmid P, Betsch C. Effective strategies for rebutting science denialism in public discussions. *Nat Hum Behav* 2019;3:931-9.
- Wei-jie Guan, Zheng-yi Ni, Yu Hu, et al. Clinical characteristics of 2019 novel coronavirus infection

in China. medRxiv 2020.02.06.20020974; doi:
<https://doi.org/10.1101/2020.02.06.20020974>
<https://www.medrxiv.org/content/10.1101/2020.02.06.20020974v1>

Wuhan Municipal Health Commission. Wuhan Municipal Health and Health Committee's Report on Unexplained Viral Pneumonia (Article in Chinese). Published: 2020-01-05
<http://wjw.wuhan.gov.cn/front/web/showDetail/2020010509020>

Edsel Maurice T. Salvana, MD, DTM&H, FISDA is the director of the Institute of Molecular Biology and Biotechnology of the National Institutes of Health, University of the Philippines Manila.