INFODEMIC: DEADLIER THAN PANDEMIC?

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An infodemic is an overabundance of information, both online and offline which includes deliberate attempts to disseminate wrong information to undermine the public health response and advance alternative agendas of groups or individuals. Covid has brought us to an unprecedented situation. Lockdowns, lack of job security, a sense of restlessness and a constant fear of death has engrossed the masses. A kind of mass hysteria is developing which is increasing every passing day. These situations are ideal for the propagation of any sort of mis-information via social media. A frantic search for solutions and the basic instinct of helping a fellow mate is driving the masses to consume anything and everything and distribute the same, without even verifying the content. In the light of the above, science communication can play a very effective role. Building awareness among the commons and empowering them to distinguish a rumor from fact is perhaps the greatest challenge for a science communicator. It is a herculean task that requires coordinated effort of many like-minded Institutions and individuals. In this article an attempt has been made to address the issue of Infodemics along with the probable approaches to tackle the same.

Introduction

“Vaccines can cause real harm. The body is behaving like a magnet. So it’s best avoided” - a heated argument was going on the other day among a group of people. Such arguments are becoming more frequent as the cases of covid are on the rise. People seem to be forming their opinions based on the innumerable snippets that are coming from everywhere in the social media.

For the last two years our lives have changed like never before. Gone are the days when Good morning messages, innocent jokes or quotes used to greet us in the morning. Now we are bombarded with a plethora of messages that seem to be revolving around a central theme, Covid. Thanks to the media reports and visuals that are beaming in our drawing rooms for 24 hours, we are now engulfed in a state of constant fear. But experts opine that most of the reports have no scientific base.

Welcome to the World of Infodemic: Such is the impact of this relatively new phenomenon, which is an outcome of affordable technologies and global reach of social platforms, the UN Secretary-General and the Director-General of the World Health Organization Adhanom Ghebreyesus at the Munich Security Conference on Feb 15, 2020 declared that we are currently fighting an infodemic in the same way as we are fighting a pandemic.

An infodemic is defined as a tsunami of information—some accurate, some not—that spreads alongside an epidemic. If not managed properly, an infodemic can have direct negative impacts on the health of populations and the public health response by undermining the trust in science and interventions¹,².

History of Infodemics

The word Infodemic is a novel portmanteau term that means ‘Information epidemic’. On May 11, 2003, David J. Rothkopf published an article in the Washington Post about the SARS epidemic. According to Rothkopf, “SARS...
is the story of not one epidemic but two, and the second epidemic, the one that has largely escaped the headlines, has implications that are far greater than the disease itself. That is because it is not the viral epidemic but rather an “information epidemic” that has transformed SARS, or severe acute respiratory syndrome, from a bungled Chinese regional health crisis into a global economic and social debacle.” After its introduction in 2003, this term tasted its first big success when it was included in the New Oxford American Dictionary, where it was defined as “a surfeit of information about a problem that is viewed as being a detriment to its solution”\(^3\). SARS epidemic marked the arrival of this unique term, ‘infodemic’ which was subsequently used during the Avian flu of 2006, the Swine flu of 2009 and Ebola virus of 2014. Misinformation has contributed majorly for spreading Ebola and even to polarize the public support against the vaccines for measles\(^5\). Perhaps the greatest impact of infodemic is being witnessed in the recent epidemic when people started reacting strongly to any piece of information that appeared in the social media\(^5,6\). There were reports that on multiple occasions, people were attacking healthcare people when they visited places for screening. The situation was so bad that Supreme court had to issue guideline where it said, “The Government of India, respective states/Union Territories and respective authorities are directed to provide the necessary police security to the doctors and medical staff in hospitals and places where patients who have been diagnosed COVID-19 or patients suspected of COVID-19 or those quarantined or housed.” (Deccan Herald, April 11, 2020).

### Covid Infodemics and its Impact

According to reports that appeared in Press Trust of India, Business Standard, CNBC.\(^7\)

- During the pandemic year, there were 24 billion WhatsApp shares related to Covid.
- In India’s homegrown social media platform, 750 million users generated content and uploaded it to the media.
- There was a clear inclination among the users to post videos compared to images, on different social platforms. Over 700 million hours of video content were consumed on the platform during the year, with 30,000 hours of videos uploaded on ShareChat daily.
- The use of social media like Youtube has increased manifold during the lockdown period.
- TikTok says it has deleted roughly 29,000 coronavirus-related videos in Europe for breaking its rules on Jul 17, 2020. Approximately 3,000 of these clips contained medical misinformation.

As evident from above, lockdown has given a lot of spare time to everyone. As a result, there was an exponential increase in the time one spent in social media. Often it led to sharing content without giving a second thought. Many a times, this resulted in spreading panic among the masses. Sensing the damage that is being caused by these misinformation, many a media platforms took proactive roles to deal with this issue. Even though a lot of damage could be prevented due to constant vigil of the administrators of different social platforms as well as by the government of different countries, there were some very notable events that influenced the overall psyche of the masses. Before we discuss the underlying psychology of why common people believed in such unscientific reports, it will be pertinent to go through some of the major misinformation that has gone viral.

- In May 2020, a video called ‘Plandemic’ was launched on Facebook that went viral and hit almost all the social media platforms like Twitter and Youtube. This video was made by a group of doctors who called themselves...
America’s Frontline Doctors. This video claimed that vaccines “weaken” people’s immune systems and that wearing a mask would “activate” the coronavirus. It has claimed that the anti-malaria drug hydroxychloroquine is “a cure for Covid” and “you don’t need a mask” to slow the spread of coronavirus. Within 24 hours, it got 20 million views on Facebook alone. The most worrying part of this highly viral video was that the President of The United States, Donald Trump and his son shared this video from their personal accounts.

- According to a study published in Nature on May 13, 2020 titled ‘The online competition between pro- and anti-vaccination views’, scientists studied 100 million Facebook users and found that there is an explosive growth in anti-vaccination supporters which may increase manifold in days to come. Similar phenomenon was noticed during the anti-vaccination movement of measles in 2019.

- 5G testing is the main reason for the 1st and 2nd wave of Covid. The claim goes on to state that “just like the previous generation of mobile networks (4G) killed birds, the 5G network will cause the end of animals and humans”. It was really alarming when a big celebrity from India filed cases in Delhi High Court questioning the safety of 5G.

- In India, the circulation of fake news stating the extension of the lockdown for more than three months created such a panic among the labourers in the cities that they started migrating to their hometowns. Some even lost their lives in the process. This issue was brought before the Supreme Court of India. Solicitor General, Tushar Mehra, raised the seriousness of the fake news issue. Many similar instances have occurred in the country which has endangered lives.

- Perhaps the most striking article appeared on a leading daily, when...
the 2nd wave of covid was having a scathing attack on India. In this article, a team of Astrologists have suggested measures based on their zodiac sign that will protect them from coronavirus. In one such sun sign, the persons were advised to help a widow in need and to offer sweets to cows, if they want to remain healthy.

- In recent times, reports appeared in leading dailies where people were seen smearing cow dung all over the body with the belief that it will protect them from covid.

In addition, there were some questionable suggestions that became very popular during this pandemic. Some are mentioned below-

a) If you have a runny nose and sputum, you have a common cold, not Covid-19.

b) This new virus is not heat-resistant and will be killed by a temperature of just 26/27 degrees. It hates the Sun.

c) If someone with the new coronavirus sneezes, it travels about 10 feet before it drops to the ground and is no longer airborne.

d) Drinking warm water is effective for all viruses. Try not to drink liquids with ice.

e) The virus is being created in a lab and funded by the Bill Gates Foundation. As such no medicine can cure it.

Research has shown that during this pandemic, people searched internet for a variety of topics like Infections, symptoms, number of deaths, new findings, new medicines, what experts are saying etc. The deluge of information transmitted through social media, most of which were misinformation, impacted the life of the common man so strongly that very often they felt utterly confused.

Impact of Infodemic on people and the Underlying Psychology

A 50 year old man, in Chittoor district of Andhra Pradesh, committed suicide on 12th Feb 2020, when he thought that he was suffering from covid. In reality he was having a simple viral fever. Healthy Analytics Asia, a leading multimedia platform published a disturbing news on June 12, 2020 that Iran reported more than 700 deaths after being poisoned by bootleg alcohol in early March – the victims had reportedly consumed methanol, responding to fake news that alcohol prevented the coronavirus infection.12

Psychologists have studied human behavior during stressful situations and observed the following trends–

- Social media may escalate anxiety more than the traditional media like the newspaper or television.
Based on their study of Zika virus, they state that the more people read about the virus in social media, their perception of risk increases.

- Too much media exposure can undermine mental health. Unfortunately the long lockdown has done just that. This has resulted in the development of acute stress among the individuals. In fact it was found that the news of the Marathon Bombing of Boston has caused more stress among people than the ones who were directly involved.

- People seem to believe the information that come from trustworthy sources. It can be an organization or an expert or someone whom they trust (celebrity). It is interesting to note that the number of publications that has been submitted for preprints have increased substantially during this time.

Many times, these preprints were quoted on social media as authentic information that escalated the confusion among the masses which often lead to their irrational stockpiling. Eg- Hydroxychloroquine was suggested as a possible prevention method for treatment for COVID-19.

- Information overload increases a sense of risk among people as they feel that they cannot control the situation and they are fighting a losing battle against the invisible enemy. This makes them go into depression, anxiety, restlessness and emotionally drained.

Perhaps one of best experiments conducted to understand mass psychology was reported by Neil F. Johnson and his team, that was published on 13 May 2020 in the journal ‘Nature’ titled ‘The online competition between pro- and anti-vaccination views’.

In this experiment, the data was collected from the Online platform facebook where a system level analysis was carried out to study the views of nearly 100 million individuals regarding vaccination, from a pool of 3 billion facebook users from across countries, continents and languages.
Unexpected Findings of This Experiment

1. Anti-vaccination groups are attracting the undecided clusters more strongly than the pro-vaccination clusters.

2. The anti-vaccination clusters are widely present and hence have more influence than the pro-vaccination ones.

3. Anti-vaccination clusters offer a wide range of potentially attractive narratives that blend topics such as safety concerns, conspiracy theories and alternative health and medicine, and also now the cause and cure of the COVID-19 virus. By contrast, the pro-vaccination ones are monothematic and much less attractive.

4. The anti-vaccination clusters grew exponentially during the measles outbreak (300%) with the joining of the undecided clusters.

5. The widely separated anti-vaccination clusters could attract more numbers of undecided clusters by creating content pertaining to the local taste.

6. Anti-vaccination clusters self-locate geographically that range from cities to globe and they remain interconnected.

The findings tell researchers that the traditional mass action modeling needs to be modified to study population models during these special occasions.

Nevertheless psychoanalysts have found our vulnerability to misinformation due to the following reasons\(^1\) –

a) Cognitive Miserliness – Our preference to use simpler, easier ways of solving problems than ones requiring more thought and effort.

b) Dual Process Theory - We have two basic ways of thinking: System 1, an automatic process that requires little effort; and System 2, an analytical process that requires more effort. Because we are cognitive misers, we generally use System 1 thinking. As such we tend to believe those things are true which are easy to understand and simplistic.

c) Heuristics – We often fall prey to ‘social endorsement heuristic’ ie; that someone we trust has endorsed a post on social media.

d) Cognitive Dissonance is the negative experience that follows an encounter with information that contradicts your beliefs. This can lead people to reject credible information to alleviate the dissonance.

e) Confirmation bias is the tendency to believe information that confirms your existing beliefs, and to reject information that contradicts them.

Malcom Gladwell, in his book, The Tipping Point, tried to explain the mechanism through which some idea becomes a part of the society and induces a behavior change. It’s a kind of diffusion of an idea that occurs when at least three sets of people ie; Connectors (people with good social skills and professional knowledge like Policy makers and Politicians), Mavens or Experts and Salesman (people with outstanding personalities and persuasive powers like Celebrities) promote an idea.

Steps Taken to Contain the Infodemic

WHO has partnered with leading social platforms like Twitter, Facebook, Tencent, Pinterest, Youtube, TikTok and similar other companies to tackle the infodemic. In addition its team is working with Google to create a SOS alert as well as design visuals that target specific population groups. WHO acknowledges the power of the influencers and as such are working with them in Asia to spread the correct message. The world’s first infodemiology conference was organized by WHO in June 2020 where experts from different countries expressed their views regarding infodemic\(^1\).

The UN had also launched ‘Verified’, an initiative to combat the growing scourge of Covid-19 misinformation by increasing the volume and reach of trusted, accurate information. This initiative was supported by 132 countries around the World, including India. Some of the notable steps taken by UN to combat the menace of infodemic are –

a) Setting up of Information Network for Epidemics (EPI-WIN) that closely track and respond to misinformation, myths and rumours and provide tailored information and evidence for action.

b) Collaborated with the International Center for Journalists (ICFJ), which is assisting journalists working on the frontlines of the “disinfodemic” around the world, to ensure that accurate, trustworthy and verifiable public health information reaches communities everywhere.
c) UN Department of Global Communications (DGC) is working with thousands of civil society organizations as well as NGOs from around the world and is conducting a host of activities to encourage them to transmit correct information among their stakeholders.

**Initiatives Taken in India**

Like many other countries, India is actively trying to combat this issue by implementing a host of measures that are listed below:

a) Wide promotion for the use of official websites such as the Ministry of Health and Family Welfare (MoHFW) for seeking any kind of information related to Covid-19.

b) Whenever searches are made in any social platform regarding Covid, the users are usually directed to the Government websites.

c) In a bid to contain the deadly coronavirus, the Union Ministry of Health and Family Welfare issued 24/7 toll-free national helpline numbers for addressing COVID-19 queries. The new helpline numbers are 1075 and 1800-112-545 and 011-23978046.

d) The Government is actively promoting the use of the “Aarogya Setu” app for any kind of information.

e) Launch of a chatbot named ‘MyGov Corona Helpdesk’ by WhatsApp in partnership with the Health Ministry to provide accurate information; Launch of #GharBaithoIndia campaign by TikTok to encourage citizens to stay at home. In addition, a limitation on the number of shares of a forwarded message has been limited to stop the frequency of spread of any news.

**Challenge for the Science Communicators**

Even though Governments as well as professional bodies all over the world are trying their best to tackle the infodemic, the menace seems to be raising its ugly head again and again. One such incident came to the broad light when people tried to make oxygen at home, following some viral videos on social media. The present infodemic is both a challenge and an opportunity for the science communicators. As evident from the above discussion, one can understand the broad causes that drive the proliferation of misinformation. It is high time that the very causes that lead to the growth of misinformation are addressed in a scientific manner. Some of the steps that can be taken are mentioned below:

- One needs to design the messages which are simple to understand so that it satisfies their cognitive miserliness.
- Culturally humans are attracted to stories. As such real stories that are positive in nature need to be created, to deliver a point.
- Scientific Institutions need to work together and disseminate information that is non-ambiguous. We need to create a body of trust so that it satisfies the ‘social endorsement heuristic’ model.
- Advanced technologies like rule-based engine (non-cognitive text analytics) and an artificial intelligence application based on cognitive machine learning (ML) may be used to detect misinformation as soon as it appears in any media. Once detected, the same must be countered with full authority, in an extensive manner.

**Conclusion**

Infodemic is often compared to a deadly digital virus that spreads like a wildfire, in a matter of hours. Long before authorities can take corrective steps; it can cause harm that is often unthinkable. Unlike other issues, this is a constantly evolving phenomenon which needs to be understood holistically. The desired change in behavior can only be achieved if the problem is dealt with in an orchestrated manner. The same forces that lead to the establishment of an erroneous idea among the masses need to work together to establish the real fact. It is high time that science communicators need to explore all the available resources so that the voices of the experts could be reached to every nook and corner of the society.

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