

Information Overload and Infodemic in the COVID-19 Pandemic

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Abstract

The world has experienced pandemics worse than the coronavirus disease (COVID-19) which resulted in great loss of life and economy. However, the global effect of this pandemic has been devastating. Billions of people are in lockdown and isolation on six continents around the world. Most have easy access to information due to internet connectivity and electronic media, which has helped share information about the pandemic. However, information overload during the current COVID-19 pandemic has posed a set of challenges not encountered before. There is an "infodemic" in which false news, conspiracy theories, magical cures and racist news are being shared at an alarming rate, with the potential to increase anxiety and stress and even lead to loss of life. This review highlights some of these challenges and suggests general measures to avoid information overload and infodemic in the connected world of 21st century.

Keywords: Social Media, Pakistan, Coronavirus, Facebook, WHO, Global health, Mental health, Lockdown.

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Introduction

Pandemics are large outbreaks of an infectious disease over a wide geographical area and can result in widespread morbidity and mortality.¹ A pandemic can lead to social, economic and political disruption. The novel coronavirus disease (COVID-19) outbreak originated from Wuhan in China in December 2019 and gradually spread to 6 continents, becoming a global threat as the World Health Organization (WHO) declared it a pandemic on 11th March 2020. The world has seen pandemics worse than COVID-19 with very high mortality in which millions died and economies were destroyed.¹ However, the devastating global effect of the current COVID-19 pandemic appears unprecedented. At least partially this can be attributed to the information overload and "infodemic" which accompanies this pandemic,² in which false news, conspiracy theories,

magical cures and racist news are being shared. Currently, the connectivity of the world is at the highest level in human history. Access to internet and smart phones and laptops (which are now available at much cheaper rates as compared to a decade ago) has made it possible to collect and share data in real-time, collaborate across different continents, have live video conferences to share experiences, upload educational videos and make scientific information accessible to all as soon as it is available. However, during this pandemic a negative side of this connectivity has been revealed in the form of information overload and infodemic.

Problem of Information Overload and Infodemic

In pandemics before the internet era, along with the lack of well-developed healthcare systems and appropriate infection control, people also died due to lack of information and early access to expert advice. The COVID-19 pandemic has brought in its wake a new set of challenges at a scale not encountered in any of the previous pandemics: the problem of information overload and infodemic. A large part of the world population is in lockdown and isolation. Many are suffering from boredom and excessive time with nothing to do. Social and electronic media for man is the only source of information and entertainment. Globally, COVID-19 news is dominating both these platforms since Jan 2020. Although the availability of such platforms has resulted in sharing of useful information, valuable disease related data, making people aware of prevention strategies and the value of social distancing, at the same time massive and repeated sharing of unauthenticated and sometimes dangerously incorrect information has had very negative consequences. People have died as a result of misinformation (for example, in Iran from the consumption of large amounts of alcohol, and in the USA by taking antimalarials for disease prophylaxis).^{3,4} Others (mainly Asians and Africans) have faced increased COVID-19 related discrimination and racism.⁵ There are reports of panic-buying and stock piling of essentials all around the world,⁶ even of physicians hoarding experimental COVID-19 drugs for relatives.⁷

WHO has documented and rejected most of the conspiracy

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Table-1: Selected websites for reliable information on COVID-19 pandemic.

S. No	Website	Web address	National or Global	Description
1.	Government of Pakistan COVID 19 Website	http://covid.gov.pk/	National	<ul style="list-style-type: none"> ◆ The Official website of GOP about the statistics and figures about COVID-19 cases in Pakistan and around the globe ◆ Website is regularly updated with fresh statistics ◆ There are guidelines, list of facilities managing COVID 19 patients in Pakistan, a Chatbot and list of FAQs available on the website
2.	National Institute of Health, Islamabad, Pakistan	https://www.nih.org.pk/novel-coronavirus-2019-ncov/	National	<ul style="list-style-type: none"> ◆ The official website of NIH has a section dedicated to COVID-19 pandemic. ◆ It has detailed figures and statistics about the confirmed cases, deaths and recovered patients ◆ The website has detailed list of all the quarantine, diagnosis and treatment centers for COVID-19 in Pakistan ◆ There are detailed SOPs regarding diagnosis, quarantine, social distancing, burial of COVID 19 cases, waste management and zoning of hospitals. ◆ There are posters of Public Service messages and list of activities NIH is doing all around the country to fight this pandemic.
3.	WHO Coronavirus Disease (COVID-19) Pandemic	https://www.nih.org.pk/novel-coronavirus-2019-ncov/	Global	<ul style="list-style-type: none"> ◆ The official website of WHO has a section dedicated to COVID-19 pandemic. ◆ This section has global statistics on the number of cases, death and countries affected. ◆ The website is available in six international languages (Arabic, Chinese, English, French, Russian and Spanish) ◆ There are sub-sections of global travel advisory, situation reports, media advisory and research and development updates ◆ There are multiple videos related to topics such as diagnosis, prevention, management , stigmatization, use of masks and mental health in COVID-19 pandemic. ◆ There are free online training modules on COVID-19 available.
4.	NHS. Advice for everyone -Coronavirus (COVID-19)	https://www.nhs.uk/conditions/coronavirus-covid-19/	National (UK)	<ul style="list-style-type: none"> ◆ The official Website of NHS, UK has a separate page on COVID-19 for the general public ◆ There is advice for people at high risk, a list of do and don't , recommendations for self care and mental health during quarantine and isolation.
5.	NHS. Coronavirus guidance for clinicians and NHS managers	https://www.england.nhs.uk/coronavirus/	National (UK)	<ul style="list-style-type: none"> ◆ The official Website of NHS, UK has a separate page on COVID-19 for the Clinicians, NHS managers and other health Care professionals ◆ The website has detailed instructions for the primary care, secondary care (including advice for different sub specialties) and for community based health, social care, mental health trusts and ambulance services. ◆ It offers advice regarding infection control, finance management, isolation, work force required and discharge planning in different conditions.
6.	John Hopkins University of Medicine, Corona Virus Resource Center	https://coronavirus.jhu.edu/	Global	<ul style="list-style-type: none"> ◆ The official Website of John Hopkins University of Medicine, USA has a separate section on COVID-19 ◆ It has excellent graphical representation of the local and global cases of COVID-19 in form of animated graphs.

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S.No	Website	Web address	National or Global	Description
				<ul style="list-style-type: none"> ◆ It provides basic information of different aspects of the diagnosis, prevention and management of COVID-19 ◆ There an option to subscribe to the newsletter to remain updated with the latest news. ◆ There is a section of resource network which provides links to other institutes of John Hopkins working on other aspects of COVID-19 e.g. ethics of providing services during pandemics, prevention and preparedness at the national and international level and critical public health insights.
7.	Centers for Disease Control and Prevention. Coronavirus (COVID-19)	https://www.cdc.gov/coronavirus/2019-ncov/index.html	National (USA)	<ul style="list-style-type: none"> ◆ The official website of CDC, USA has a page dedicated to COVID-19 ◆ The page is available in five different languages. ◆ Although the CDC mainly caters for the USA but there are many useful resources that can be used by general public and HCPs all around the globe. ◆ It provides detailed statistics on the number of cases in the USA. ◆ There are help guides on "How to Protect Yourself" and "What to do if You are sick" ◆ There an option to subscribe to the newsletter to remain updated with the latest news.
8.	European Centre for Disease Prevention and Control, Coronavirus	https://www.ecdc.europa.eu/en/coronavirus	Global	<ul style="list-style-type: none"> ◆ The Website of ECDC display COVID-19 related information in different categories publications, news, events and data. ◆ The website also provides information on other Corona Viruses like MERS-CoV and SARS.
9.	Google COVID-19 Information and Resources	https://www.google.com/covid19/	Global	<ul style="list-style-type: none"> ◆ Google has established a dedicated page for COVID-19 which displays information under five different categories. Health information, Safety and prevention tips, resources from Google, Data and Insights and Latest from blogs. ◆ The website displays data related to each country and links to the official COVID19 website (where available).

Abbreviations: CDC; Centers for Disease Control and Prevention, ECDC; European Centre for Disease Prevention and Control , FAQs; Frequently Asked Questions, GOP; Government of Pakistan, MERS-CoV; Middle East respiratory syndrome coronavirus, NHS; National Health Services, SARS; Severe acute respiratory syndrome, WHO; World Health Organization.

theories, hoaxes, and falsehoods regarding COVID-19 circulating on social media. These include exaggerated claims about the number of cases and deaths, conspiracy theories about the origin and spread of COVID-19 and fake claims of cure.⁸ Information overload and infodemic is a potentially dangerous trend which needs attention by stakeholders including governments, policy makers, healthcare professionals and the general public.

How to Avoid Information Overload and Infodemic

During this pandemic each member of a social media website or messaging application (for example, WhatsApp) has a moral responsibly to be more vigilant and careful while sharing any COVID-19 related news. Considering the

current environment in Pakistan we suggest the following general measures, although we believe that these are also applicable in different settings worldwide:

1. Instead of randomly searching the internet for COVID-19 related news which may result in confusion, disappointment and frustration, only visit authentic and official websites. Table-1 has a list of some trusted national and international organisations working on COVID-19.

2. WHO has partnered with WhatsApp to disseminate correct and up-to-date information on COVID-19 for the general public, which includes information on the number of cases, debunking different myths about COVID-19, travel advisory and advice for protection.⁹ This free service can be availed by sending a "hi" message to +41 79 475 22 09.

3. Do not keep a daily count of the national and global cases of COVID-19 and refrain from regularly sharing such information on Facebook pages or WhatsApp groups. In addition, reading about infection and death rates regularly can adversely affect morale and mental health during this time of lockdown and isolation.

4. If a COVID-19 report or news item appears suspicious, try to verify it on one of the many fact checking websites dedicated to debunking myths and clarify hoaxes or use the WHO website on debunking COVID-19 myths.^{8,10}

5. Do not believe and share the claims of miracle cures and homemade remedies for prevention and management of COVID-19. At present, there is no effective vaccine, or any particular class of medication recommended for prophylaxis.⁸ If the treatment of COVID-19 was so simple, then billions would not have been locked down in their homes and thousands would not have died.

6. If you are a physician or healthcare professional, then do not forward 20-page PDF files and 50-slide PowerPoint Presentations to all of your contacts/groups. In all probability, no one has the time and energy to read this kind of diverse COVID-19-related scientific information on a daily basis.

7. Avoid inflammatory or racist posts targeting a particular group of people or professionals. This is a time for unity and a collective response.

8. Instead of further adding to the growing volume of misinformation on COVID-19, show gratitude to the healthcare workers who are at the forefront of responding to this pandemic. #ThanksHealthHeroes is one of the hashtags commonly used on different social media platforms.

9. There are many amazing stories of service and sacrifice by different groups of people and individuals in this pandemic which usually are not highlighted in the mainstream media.^{10,11} There is a need to share these stories more in order to boost morale and show the positive side of the humanity at large.

10. Reduce time spent on reading COVID-19 related news. WHO recommends minimising watching, reading or listening to news about COVID-19 that causes one to feel anxious or distressed. WHO also recommends that one should seek COVID-19 related information updates at specific times during the day, once or twice only.¹²

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References

1. Madhav N, Oppenheim B, Gallivan M, Mulembakani P, Rubin E, Wolfe N. Chapter 17: Pandemics: Risks, Impacts, and Mitigation. In: Jamison DT, Gelband H, Horton S, Jha P, Laxminarayan R, Mock CN, Nugent R, editors. *Disease Control Priorities: Improving Health and Reducing Poverty*. 3rd edition. Washington, DC: The International Bank for Reconstruction and Development / The World Bank; 2017.
2. Zarocostas J. How to fight an infodemic. *Lancet* 2020;395:676.doi: 10.1016/S0140-6736(20)30461-X.
3. Hickok K. Husband and wife poison themselves trying to self-medicate with chloroquine [Internet]. *livescience.com*. 2020 Mar 24 [cited 2020 Apr 10]. Available from URL: <https://www.livescience.com/coronavirus-chloroquine-self-medication-kills-man.html>
4. Haghdoost Y. Alcohol Poisoning Kills 100 Iranians Seeking Virus Protection. *Bloomberg.com* [Internet] 2020 Mar 18 [cited 2020 Apr 10]. Available from URL: <https://www.bloomberg.com/news/articles/2020-03-18/alcohol-poisoning-kills-100-iranians-seeking-virus-protection>.
5. Stop the coronavirus stigma now [editorial]. *Nature* 2020;580:165. doi: 10.1038/d41586-020-01009-0.
6. Casal L, Moynihan R. Pasta, milk and toilet paper are being rationed due to panic-buying around the world. Here are all of the items that'll be tougher to get your hands on for COVID-19 quarantines. [Internet] *Business Insider*. 2020 Mar 14 [cited 2020 Apr 14]. Available from URL: <https://www.businessinsider.com/products-rationed-covid-19-panic-buying-novel-coronavirus-2020-3>
7. Sullivan L, Rowland D. Ohio pharmacy board restricts prescriptions for experimental coronavirus treatment drugs. [Internet] *The Columbus Dispatch* 2020 Mar 21 [updated 2020 Mar 23; cited 2020 Apr 13] Available from: <https://www.dispatch.com/news/20200321/ohio-pharmacy-board-restricts-prescriptions-for-experimental-coronavirus-treatment-drugs>
8. WHO. Coronavirus disease (COVID-19) advice for the public: Myth busters [Internet] [cited 2020 Apr 14]. Available from: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/myth-busters>
9. The World Health Organization launches WHO Health Alert on WhatsApp [Internet]. *WhatsApp.com*. [cited 2020 Apr 14]. Available from: <https://www.whatsapp.com/coronavirus/who>
10. Blair O. 55 Positive News Stories You May Have Missed During The Coronavirus Outbreak: In dark and distressing times, humankind can really pull through to show its good side. [Internet] *elle.com/uk* [updated 2020 Apr 14; cited 2020 Apr 14]. Available from URL: <https://www.elle.com/uk/life-and-culture/g31658888/coronavirus-covid-19-good-news/>
11. Gibson A. Coronavirus stories: kindness and joy emerge in midst of COVID-19 outbreak. [Internet] *The Active Times*; 2020 Apr 07 [cited 2020 Apr 15] Available from URL: <https://www.theactivetimes.com/coronavirus-stories-of-kindness>
12. WHO. Mental health and psychosocial considerations during the COVID-19 outbreak [Internet] *World Health Organization*; 2020 Mar 18 [cited 2020 Apr 15] Available from: <https://apps.who.int/iris/handle/10665/331490>.