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COVID-19 Vaccination and the Challenge of Infodemic and Disinformation

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Introduction

One year after it was declared a pandemic by the World Health Organization (WHO), the novel coronavirus disease 2019 (COVID-19) continues to influence healthcare dynamics, social patterns and economic systems of the world. Despite the initial concerns of a global health catastrophe in the face of rising number of cases, the overall global response to the COVID-19 pandemic has been successful. Strategies were devised and implemented across the globe, albeit in varying manners. Many studies on different aspects of the pandemic and management strategies of COVID-19 were conducted, and results were shared rapidly within days to weeks. Although there are still many unanswered questions and ambiguities, the future looks promising. A major milestone in efforts against this pandemic was the rapid and successful development of different vaccines against COVID-19. Successful vaccination against COVID-19 can not only reduce the disease burden but help us to return to a pre-COVID world with no restrictions on movement and socialization. However, the vaccination campaign against COVID-19 is threatened by “Infodemic,” “misinformation,” and “disinformation”; a feature unique to the COVID-19 pandemic. We aim to highlight this issue in context of the recent vaccination campaign against COVID-19 and offer recommendations to counter this threat which can adversely undermine the efforts to curtail COVID-19.

The Disastrous Impact of Infodemic and Disinformation

WHO defines infodemic as “an overabundance of information and the rapid spread of misleading or fabricated news, images, and videos”.¹ Disinformation is “false information created with the intention of profiting from it or causing harm”.² These can manifest in the form of rumors, conspiracy theories and false news.³ The COVID-19 pandemic is different from the previous similar global health care crisis since this time ordinary people have extraordinary access to global information and ability to express their opinions.⁴ Experts have identified social media as a potential source of misinformation on COVID-19.⁵ In the last decade there has been remarkable increase in global internet access, unprecedented development of social media platforms and the ability to share news, videos, and ideas online without any major restrictions. This gave an opportunity to anyone with a smart phone or electronic device connected to the internet to offer an opinion on COVID-19 or create content related to different aspects of the pandemic. This unverified and unscientific information could reach millions of people around the globe within hours to days without any checks and

verification.⁶ This included false claims of cow urine, bleach and cocaine being recommended as COVID-19 cures and the pandemic labelled as a leaked bioweapon, a byproduct of 5G wireless technology and a political hoax.⁷ This infodemic, misinformation and disinformation related to COVID-19 had disastrous implications in the real world. For example, hundreds of people have died and around 60 developed complete blindness after drinking methanol as a cure for COVID-19 in different countries.³ In the USA, a couple died after taking an anti-malarial for disease prophylaxis.⁸ There were multiple reports of physical harassment and violent attacks toward healthcare workers, people of Asian origins and people who were quarantined.³ There were also reports of self-stigma-associated death. For example, a man in India killed himself because of a misconception that he had coronavirus infection.³

COVID-19 Vaccination and Infodemic

By successfully completing multiple trials of COVID-19 vaccines we have now entered in the next phase of the global fight against this global health care crisis. Vaccination is one of the most cost-effective ways of avoiding disease. High rates of successful vaccinations can help us overcome this global health challenge of COVID-19 pandemic. However, this is threatened by infodemic, misinformation and disinformation. The global vaccination campaign against COVID-19 is an unprecedented operation that is also met with a loud response from anti-vaccine communities currently using all available channels to manipulate public opinion.⁹ It is important to note that the resistance against vaccination is not a new phenomenon.¹⁰ Organized anti-vaccination activities were planned against smallpox vaccination in the UK as early as the 19th century.¹¹ The now discredited Andrew Wakefield study on the possible connection between measles, mumps, rubella vaccine and autism resulted in refusal of vaccination on a massive scale in the UK and USA.¹⁰ Pakistan still faces the challenge of polio vaccination refusal particularly in the rural areas.¹² Therefore, it becomes imperative that all stakeholders involved in the COVID-19 vaccination program realize the negative effect of infodemic and disinformation on these efforts and actively take steps to counter them. The important stakeholders in this case include research scientists involved in the development of vaccines, pharmaceutical companies manufacturing these vaccines, health care professionals (physicians, nurses, and allied health staff) administering vaccines, public health experts, ministries, and departments of health responsible for financing and monitoring the vaccination programs, electronic and print media and the community itself. All of them must coordinate and cooperate to make this global vaccination campaign a success.

Issue of Vaccine Hesitancy

WHO defines vaccine hesitancy as “the reluctance or refusal to vaccinate despite the availability of vaccines”.¹³ Vaccine hesitancy threatens to reverse progress made in tackling vaccine-preventable diseases. WHO has declared vaccine hesitancy as one of the top ten threats to global health in spreading communicable diseases and around the world.¹³ Experts have highlighted the issue of “vaccine hesitancy” in the context of COVID-19 vaccination and the role of anti-vaxxers. A MEDLINE search on “COVID-19 vaccine hesitancy” on 3rd March 2021 resulted in 124 results with 68 publications in 2021 alone. The strategies commonly used by anti-vaxxers to create misinformation against COVID-19 vaccination campaign include creating conspiracy theories, promoting fake experts, disseminating false logic, promoting unrealistic expectations and misrepresentation of facts.¹⁴ Other additional challenge is the

use of social bots during COVID-19 pandemic. “Bots” are automated social media accounts which, in addition to human users, participate in discussions and can be used to promote false content. For example, researchers from Carnegie Mellon University, USA found that many social bots spread and amplified false medical advice and conspiracy theories related to COVID-19 during the first global wave of the pandemic.¹⁵ “Trolls” are individuals who purposefully misrepresent their identities to promote fake news. These trolls negatively influence online discourse about vaccines. Broniatowski et al.¹⁶ identified “influence bots” on Twitter in a stream of vaccine-related tweets designed to spread vaccine discord.

Recommendations

COVID-19 related infodemic and disinformation is a threat to the successful COVID-19 vaccination campaign. It is important to identify strategies to proactively counter them. We propose the following recommendations which can be modified as per the local context and resources available in different countries.

- It is important to engage with the community and public to increase awareness regarding the vaccination program.
- The engagement with the community should employ a multi-prong strategy which must include appropriate use of social media.
- During COVID-19, social media is proving to be a double-edged sword.¹⁷ Social media accounts should be moderated by skilled professionals capable to filter out misinformation.¹⁷
- There is a need to create content in the national language and major regional languages of the country to reach out to maximum number of people in all parts of the country.
- It is important that the content must be created by a team of experts including health care professionals, media personal, public health experts and representatives of the community.
- The medical students and residents must be involved in these awareness campaigns and countering infodemic and misinformation since they are more experienced in the use of social media than the senior medical professionals.
- Accounts promoting false and negative information about the COVID-19 vaccination should be reported and the social media organizations should be requested officially to warn or block them.

We all yearn for the pre-COVID-19 world where we could move around, meet, interact and socialize with each other. A successful COVID-19 vaccination campaign offers a hope for a return to normal. We should not allow the infodemic or misinformation to shatter this hope and need to counter them effectively by the steps mentioned above.

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