

COVID-19 spurs interest in preprints and improves scientific collaboration



After a study is conducted and submitted for publication in a scientific journal, the manuscript undergoes critique from other experts in the field, a process called “peer review.” While rigorous peer review ensures studies are held to high standards, it is not a short process, with some papers taking months or even years to get published. However, in situations such as the current COVID-19 pandemic, time is of the essence.

Preprints offer a platform for rapid knowledge dissemination. In 1991, a preprint server called arXiv was launched for academics in the math and physics sciences. The biological and health sciences took a while longer to adopt the use of preprints, with Cold Spring Harbor Laboratories launching bioRxiv for biological research in 2013 and medRxiv for health research in 2019. These two online platforms publish manuscripts within 48 hours of submission, following preliminary screening. All preprints are open-access, users can then leave comments, and the two platforms have given rise to fruitful discussions on social media platforms such as Twitter and Facebook.

While scientists were initially skeptical of preprint repositories, the use of preprints has been picking up. Just this last week, around 170 submissions on the topic of

COVID-19 were submitted to bioRxiv and medRxiv. One main concern about preprints is the release of faulty information into public media, fueling misinformation and encouraging the formation of conspiracy theories. On January 31, 2020, a bioRxiv preprint suggested that SARS-CoV-2 may have been genetically engineered. A flood of feedback on Twitter and bioRxiv questioned the preprint's methodology and results, and the preprint was retracted two days later. This is an example of the scientific community quickly noticing a preprint and providing useful immediate feedback.

Preprint platforms have also been shown to be underutilized during past epidemics. A 2018 paper found that during the 2015 Zika epidemic and the 2014 West African Ebola outbreak, although many preprints were submitted over 100 days before being published in a formal journal, less than 5 per cent of manuscripts focusing on the outbreaks were submitted to preprint repositories.

Although there are valid concerns for the widespread use of preprints, the benefits may outweigh the costs. Exponential COVID-19 infection rates are being observed around the world and the window for stopping this pandemic shrinks with each passing day. Preprints can speed up research and reduce redundancies. As the world scrambles to understand and contain COVID-19, open communication among research groups is invaluable. The current pandemic has spurred interest in preprints, and continuing to embrace this resource in the years to come may turn out to be extremely valuable.

Article by Maxwell Chan

References

- Johansson et al., 2018. [Preprints: An underutilized mechanism to accelerate outbreak science](#). PLoS Medicine
- [bioRxiv FAQs](#)