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OPINION ARTICLE

Research exceptionalism and opportunism during the coronavirus pandemic

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Summary

In the era of COVID19, research has been conducted at an extraordinary pace, eliminating the time from submission to publication to unprecedented levels. This is facilitated by preprint platforms and social media which can spread, reproduce and promote new knowledge with enormous speed. However, there are many concerns regarding the risk of potential deflection from the peer review process that some journals might have adopted, in order to manage the overwhelming wave of COVID19-related submissions. Another dimension of this problem, is the inequity and the publication hurdles that many non-COVID19 scientists might face, since review process of non-COVID19 papers is delayed and journal space is limited to serve the COVID19 literature. Besides the access to publishing, some scientists have redirected their scholarly activity towards coronavirus publications, either permanently or temporarily or even opportunistically. The latter might be attributed to the ease that COVID19 related articles are getting published and cited. This epidemiologic and potentially academic crisis might also be an opportunity for editors, journals and reviewers to create a new journalistic landscape where rapid, transparent and thorough review process can be offered to the authors based on the lessons learned from the current ongoing crisis.

Key words: *COVID-19, coronavirus, research*

Introduction

Research on COVID19 has been conducted at an extraordinary pace. During typical times, the publication process needed around 100 days from submission to acceptance [1]. However, despite the overwhelming volume of research being currently published, the publication process is being dramatically expedited for publications related to COVID19 research. A recent study showed that an average of 367 COVID19 journal articles are published weekly, while the median time from submission to acceptance for COVID19 journal articles is only 6 days [2]. Scientific progress depends on effective transmission of research results to the scientific community, enabling discoveries to be assessed and extended. In the same vein, facing with an epidemiologic crisis such as COVID19, which is altering society and generating questions at enormous speed, there are concerns about deflections from the "traditional" slow - but thorough - peer review process that will ensure the transparency and quality of the scholarly activity but might delay timely publication of research findings that might be of paramount clinical and societal importance. The current opinion article examines the marked changes in publication practices seen in 2020, with an eye toward the risks of expedited publication practices.

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The influx of COVID19 papers has impacted overall research output

By analyzing the freely available data from Dimensions database, it is shown that almost 1.383 million academic publications (including articles, book chapters, conference proceedings, and monographs) have been published in the first 11 months of 2020, while the total research output in 2019 was 1.22 million [3]. This suggests that scholarly publication output for 2020 is more than 150,000 publications ahead of last year. This might be attributed to the annual academic growth worldwide or it supports the belief that researchers and journals are stretching capacity, in terms of conducting research, writing, reviewing and publishing, in response to the pandemic. A breakdown of publication types suggests that the number of peer-reviewed articles is tracking about the same as 2019 (2.3 million so far in 2020), which is 54% of the number published for all of 2019. The biggest gains are in book chapters, up in 2020 by more than 110,000, and preprints, up by almost 40,000. This reflects a wide spectrum of scholarly activity, with the one end consisting of researchers rushing to publish manuscripts on COVID19, and the other end consisting of researchers, whose normal activities have been disrupted by the research lab lockdown, redirecting their resources towards projects that do not require experimental data, such as book-writing. Interestingly, more than 70% of all COVID19 related publications are preprints, that are versions of papers that precede formal peer review and publication in peer-reviewed journals. Although these articles are published in preliminary status, they are extensively read and heavily cited. Moreover, since many journals have redirected their resources to meet the increasing demand of reviewing and publishing COVID19 papers, it is unclear how non-COVID19 research and scholarly activity is being affected. Many journals warn the authors of non-COVID19 submissions that the review process will be delayed due to the effect of COVID19 to human resources, but as discussed above, that is not the case for submissions related to coronavirus. The latter creates an imbalance of access to knowledge and publication among scientists of different fields in biomedical research.

Preprints: Friend or a Foe?

The use of preprints platforms and their role in promoting science and transmitting knowledge varies substantially amongst different scientific disciplines. During the pandemic, their use has increased suggesting that preprints can facilitate rapid and effective dissemination of COVID19-related literature. They are especially easy to disseminate, since they exist on open access, PubMed-linked servers that are typically connected to social media platforms. This amalgamation of vital, complex, scientific information and a medium typically reserved for opinion and information that is not held to a peer-reviewed or even truthful standard, has been challenging to navigate. The advocates of the preprints argue that they are valuable fora to provide substantial feedback on research drafts from broad range of scientists [4]. Indeed, in non-pandemic times, this is how they have been used. However, they are now being seen as an expedited way to put data into the public domain, skirting the peer review process. Peer review is typically considered as the guardian of quality medical research, which is of paramount importance particularly when the research is meant to directly influence health care providers and policy makers or guide patient management in near real-time [5]. Peer review can prevent publication of poor science and improve study reporting. The reasonable fears that preprints could promote many erroneous claims because they lack pre-publication peer review have not been proven correct yet, but data on this matter are scarce. Thus, there is risk in conflating the typical utility of the pre-print (constructive modification on the way to a final product) with that or a peer-reviewed article.

Is the overwhelming COVID19 related scholarly activity justified?

Scientists have been uploading papers to preprint servers in unprecedented rates: a group of researchers found that in the first four months of the pandemic, scientists had published more than 16,000 articles on COVID19, at least 6,000 of which are hosted on preprint servers [6]. Of course, this reflects the high social and scientific interest around COVID19, which is likely justifiable due to the broad impact of the pandemic. However, one could argue that it is unlikely that all of these publications are scientifically sound and clinically impactful (as is the case for manuscripts in general). Indeed, many of the more impactful papers have generated their impact through controversies and reactions from the scientific community, rather than due to breakthrough science. Also, it seems that a significant portion of these papers are opinion articles instead of clinically impactful novel research findings. Thus, reconsideration of the standards and elevation of the threshold of acceptance of the COVID19-related literature is warranted.

That many scientists have switched their research interests, at least for the time, to COVID19, could potentially have a lasting effect on the scientific landscape. Conversely, publications on other coronaviruses (SARS and MERS) were largely published in specialist journals, such as the Journal of Virology, while COVID19 articles appeared in broader publications, including The Lancet and The BMJ [7]. All these deflections from the norm can create inappropriate discrepancies among scientists, since it seems that the threshold to publish in high impact journals has changed during the COVID19 era. More specifically, an opportunistic scholarly behavior can be adopted by some authors by publishing COVID19 related manuscripts since they might have higher chances of improving their scholar profile by taking advantage of the ease that their manuscripts are getting published and cited [8].

The responsibility of social media towards scientific truth

Social media, and more specifically the so-called "medical Twitter" [9] are another powerful, popular and easily accessible means to disseminate and debate breaking scientific findings, whether they have been published in standard journals or posted on preprint servers. Besides the obvious advantages of rapid dissemination of new knowledge, especially in the era of a pandemic, unthoughtful circulation of scholarly activity, especially in the form of unreviewed, preprinted papers raises concerns about the commitment of social media to scientific truth [10]. The social media platforms should not be scrutinized since freedom of opinion is a fundamental human and democratic right. Of course, fundamentally there is no expectation of accuracy in disseminating information by social media. On the contrary, accuracy is sacrosanct in cases of science and sharing of scientific data [11]. However, during these unprecedented times where speed and accuracy of information are needed for both for the scientific community and the society since they can concomitantly affect the decision making process in regards with the management of the pandemic, social media are subject to many caveats and can potentially influence and even mislead the scientific community and public opinion. The numerous physicians and scientists with valuable opinions who are commenting on a daily basis have the responsibility to highlight these caveats and maintain their objectivity towards the scientific truth.

Final remarks

With many unanswered questions about COVID19 having important implications on how healthcare providers, governments and societies respond to this crisis, the rapid pursuit of new evidence will likely continue for the foreseeable future. As such, measures are required to safeguard the integrity of the scientific evidence base. Regarding the specific issue of a large volume of articles moving quickly through the peer review process, their rapid publication is required for new evidence to be shared in a timely manner. This is particularly important during a fast-moving health crisis, such as the COVID19 pandemic. Nonetheless, the academic community should keep in mind that there is a whole non-COVID19 scientific world that has seen their research getting delayed or even cancelled during the pandemic, and they are facing difficulties to get their research published due to the limitations of journal space and human resources. Even from its inception, the purpose of scientific publishing was to provide a forum to share ideas and knowledge in response to societal needs. During these unprecedented times, scientific publishing can also be seen as a means of effectively disseminating a large volume of knowledge in the context of a global health emergency without jeopardizing continued trust in the scientific publishing process.

Conflict of interests

The author declares no conflict of interests.

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