Ethical Challenges of the "Publish or Perish" Culture in Clinical Research: Insights from the COVID-19 Pandemic

Yusuf Samet Yaraş[1], Duygu İşlek[2]

[1]Georgia Institute of Technology, G.W. Woodruff School of Mechanical Engineering, Atlanta, USA
[2]Emory University, Rollins School of Public Health, Atlanta, USA

The principle of "publish or perish" has long shaped the academic and clinical research environment, becoming a central benchmark for professional advancement and recognition within the scientific community.[1] While its original purpose was to encourage productivity and the spread of new knowledge, this mindset has developed over time, placing substantial pressure on researchers to produce frequent publications to obtain funding, promotions, and tenure. Unfortunately, this constant drive to publish can carry significant ethical drawbacks, undermining research integrity and diminishing the quality of scientific work. In this paper, we examine these negative impacts on scientific research, using examples from the coronavirus disease-2019 (COVID-19) pandemic.

The COVID-19 crisis triggered an extraordinary rise in scientific publications as researchers worldwide worked urgently to generate information on the virus, its spread, treatment, and prevention. This exceptional surge was a direct reaction to a global health crisis. However, this rush also created ideal conditions for the harmful aspects of the "publish or perish" mentality to thrive, notably evident in a marked increase in article retractions, which exposed deeper systemic flaws in the scientific publishing system.[2] Eager to offer timely insights about the pandemic, researchers released findings at an unprecedented pace, leading some to describe the situation as an "infodemic".[3] Despite editorial teams facing an overwhelming volume of submissions, peer review times dropped significantly-on average twice as fast as before the pandemic, and in some cases, reviews were completed in just 1-3 days.[4] This faster turnaround was linked to a greater number of citations, as later retrospective analyses showed. This connection suggests that quick publication may incentivize researchers to prioritize speed over the thoroughness of peer review, as reflected by the rise in retracted papers.

Retractions are generally uncommon in scientific literature. However, during the COVID-19 pandemic, the number of retractions rose sharply. In the pandemic's first year, the retraction rate for COVID-19 papers reached 0.097, which was significantly higher than the 0.023 rate seen for human immunodeficiency virus -related articles.[5] Importantly, the average time to retraction was under 2 weeks. These retractions were observed across various publications, regardless of the journal's impact factor, the author's h-index, or the open-access status of the journal.[6]

The pandemic not only heightened the demand for researchers to publish but also worsened preexisting gender gaps in academic productivity. Evidence indicates that women researchers, particularly those with caregiving duties, experienced a disproportionately greater drop in output compared to male researchers.[7] This highlights how the "publish or perish" dynamic intersects with systemic gender inequities, raising ethical questions about fairness and representation in scholarly work during global emergencies.

Additionally, the "publish or perish" mindset is closely linked to the rise of predatory journals.[8] These journals take advantage of the pressure to publish by offering an expedited and less stringent publication process, often skipping rigorous peer review. This provides researchers with an easy way to add publications to their resumes. Such practices are concerning because they can mislead review committees about a researcher's true contributions, influencing hiring, funding, and promotion decisions based on inflated measures of scholarly productivity.

The "publish or perish" mindset has also contributed to trends like hyper-authorship and hyper-publishing, each bringing specific ethical concerns. Hyper-authorship involves including an unusually large number of authors on a single paper.[9] With international collaborations expanding in recent decades, the average number of co-authors per paper has grown as well.[9] However, hyper-authorship can sometimes result in credit being given to individuals who do not meet established authorship standards, allowing some researchers to inflate their publication counts. This practice can lessen the significance of each author's role and make it harder to determine accountability within a project. In particle physics, especially at

Corresponding author: Duygu İşlek, Emory University, Rollins School of Public Health, Atlanta, USA

e-mail: dislek@emory.edu

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ORCID iDs of the authors: Y.S.Y. 0000-0002-1117-559X; D.İ. 0000-0001-6041-2320.

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CERN, it is common to see papers with hundreds or even thousands of authors due to the scale of collaboration. Yet, clinical research is not far behind; the largest example to date is a COVID-19 vaccine study involving 15,025 co-authors across 116 countries.[10] Beyond this record, hyper-authorship in medical and health sciences rose by 250% between 2015 and 2021, including a notable 90% increase from 2019 to 2020 during the pandemic's onset.[11] In contrast, physical sciences-long known for large collaborative works-saw only an 18% rise over the same period. While the main reason for this trend is the growing demand for large-scale clinical trials, it also raises expectations in an already highly competitive research environment.

Likewise, hyper-publishing describes a situation where researchers release numerous papers, often dividing what could be a single, comprehensive study into multiple smaller ones-a practice called "salami slicing".[12] It can also involve submitting nearly identical studies to different journals or recycling older research with only minor updates.[13] Although hyper-publishing can create the appearance of greater productivity and visibility, it tends to weaken the overall quality of research and can lead to the spread of fragmented, repetitive, or preliminary findings that may not hold up thorough scientific evaluation.[14]

The "publish or perish" mindset presents ethical challenges in clinical research, which became particularly clear during the COVID-19 pandemic. Giving priority to rapid publication over thoroughness exposed vulnerabilities in maintaining research quality and integrity. Many ethics committees and institutional review boards implemented accelerated review procedures, held virtual meetings, and reduced paperwork to quickly evaluate urgent studies. However, these adaptations also made it more difficult to ensure thorough protocol evaluation, manage potential conflicts of interest, and safeguard participant welfare.[15] To tackle these concerns, ethics bodies have advised actions such as developing clear, pandemic-specific protocols, enhancing training for expedited reviews, and ensuring open communication to maintain ethical standards despite tight timelines. Reforming this approach calls for cooperation among academic and publishing institutions. Moreover, genuine reform should combine policy changes with a cultural shift in how meaningful scholarly contribution is defined. Prioritizing ethical standards and research quality over sheer output is vital to preserve the integrity of clinical research.

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