Publish or perish: time for a rethink?

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Funding: No specific funding was received for this work.

Potential competing interests: No potential competing interests to declare.

Abstract

The aphorism ‘publish or perish’ has been gaining traction in Academia at an accelerated rate, resulting in more than 1.8 million articles published every year. This has led to newer publishing models, where researchers pay to publish, so that readers globally have free, unlimited access to articles. The rationale for this phenomenon is the benefit of faster and greater knowledge for researchers, readers and the society. This has unintended consequences. Much of the published research is proven to have limited value. Worse, the immense pressure on medical teachers and researchers to publish to maintain respect and status in their community forces some to unethical practices, while fueling a lucrative publication business with large profit margins. This explosive growth in the number of journals published, is producing a genre of predatory journals who do not maintain requisite quality and ethical standards. This deluge of information has prompted some institutions to initiate measures to level the playing field, ensuring that research publication brings value, instituting a check on unethical practices, and perhaps most importantly delinking teaching and research. Much more needs to be done.

The immense pressure on medical teachers and researchers to publish is producing a deluge of publications. This pressure is created because publications serve as a marker of performance and recognition for academics and the institutions they represent. It also attracts more research dollars to these institutions, fueling the pressure even further.

Bibliometrics show the number of published scientific papers has grown at the rate of three[1] to nine[2] percent annually, with nearly 1.8 million research articles, published in more than 28,000 journals entering the PubMed database annually[3], in spite of concerns that the massive volume tends to lower the quality of research published[4].

However, many medical teachers and researchers believe otherwise. Most of the currently published research is Open Access (OA) format. That is, researchers pay to publish, with their publications immediately freely available globally for all readers. Proponents of Open Access (OA) publishing point out its benefits for both the audience and the researchers. They maintain this is driven by the necessity for research being accessible to all as quickly as possible. OA allows academics in less wealthy institutions immediate and unrestrained access to research, affording them the opportunity to enhance their knowledge and put it to use for their and their patients' benefit as soon as possible. For the researchers, OA has resulted in increased citations, higher impact and faster publication times[5]. The case for OA has been made stronger by the finding that research articles published in OA journals have the same scientific impact and quality as subscription journals but in a shorter time span[6].

Doubts have been raised about the overall value of this expanded quantum of research resulting from the chronic push to "publish or perish"[7] aligned to OA publishing practices. Evidence indicates it is difficult for the intended audience, physicians and academic scholars, to sift through, identify and absorb relevant research[8]. Constrained by busy work schedules, they tend to glean medical updates from synoptic material and executive summaries, specifically the kind created by pharmaceutical firms[8] and social media[9][10]. Even when physicians do pore through medical journals at length, the information gained rarely impacts their practice of medicine[8] or public health procedures significantly. A growing chorus of voices are expressing concerns about the quality of the immense amount of published research. They argue too many journals today rank low in terms of publishing standards in organizing, disseminating, and promoting high quality valuable research[11]. The emphasis increasingly seems to be publishing one's own material to stay competitive and not necessarily on absorbing what others are doing to stay current. The urgency authors feel on publishing to survive is driving the profitability of current professional and research journals as compared to the value created by the increasingly outdated subscription-based payment model, where researchers published for free, and readers paid to read selected articles. This model established a sustainable income stream, allowing journals to maintain editorial and financial independence, augmented through advertising or publishing fees.

The immense profitability of Open-Access publishing is fueling its growth. Although journals justify the Article Processing Charges (APC) by referring to the costs to publish, the quantum of profits belie these claims. In 2010, Elsevier, whose core business is scientific publishing, had profits of £724m on just over £2bn in revenue, a 36% margin [12]! Major agreements between publishers and institutions globally, and the increased availability of allocated funding to pay publication charges[13], has provided an impetus to this model of publishing[14]. Publishers are increasingly relying on for their revenue stream and maximizing revenue by increasing the number of articles they publish, raising the fees they charge per article and increasing the number of journals they publish[15]. This Pay-To-Publish model with its rapidly growing market structure, is on its way to becoming an oligopoly. Five publishers in healthcare account for just over 50% of all papers published in 2013[16]. The pace of growth seems unlikely to decrease anytime in the near future[17].

Given the immense profitability and scale of the OA model of publishing, there is a large variation in the quality of journals and validity of research[16]. Much of the research published today has been established to have limited or no utility and cannot be replicated[18]. While top-ranking journals such as the Lancet and Journal of American Medical Association (JAMA), remain unshakeable in their standing and quality[17], some are unable to match their standards of quality and relevance[16]. A genre of 'predatory[19] journals' has emerged – pay to publish journals who do not perform mandatory quality checks and function like a community bulletin board. Some academics are resorting to unethical practices to enhance their research rankings and generate revenue. Examples of these marginal practices are 'salami slicing' where research is spliced into many manuscripts to increase the number of publications and self-citation, and self-citation the practice of increasing the citation score of one's own articles[20]. Duplicate publishing by changing the keywords and presenting findings piecemeal in different papers has also been reported[20]. Plagiarism is a common feature in biomedical research in countries on the continent of Africa[21]. It has long been acknowledged that pressure on researchers to demonstrate positive results promotes a greater likelihood of publication[22]. Research showing negative results is more likely to be published in journals with a lower impact factor[23] although discerning negative findings can be important and impactful.

In cognizance of the need for require greater scrutiny and oversight of these practices, corrective efforts are being initiated. New models of publishing are being explored. Free open-access journals dependent on crowdfunding for pre- and post- publication review have been created. They utilize intuitive, easy-to-use software to aid in reviewing, and have established tight timelines to ensure rapid processing of manuscripts. This reduces the cost of publishing without impacting the time to publication. Another initiative has been taken by JAMA and BMJ, who jointly organize the International Congress on Peer Review and Scientific Publishing. This body meets once every four years to encourage research into the quality and credibility of peer review and scientific publication[24], with the Ninth Conference in this series having recently been held in 2022[25]. Leading journals of long-term credible standing attend this conference. While this is welcome in principle, they could do a lot more. They could help check unethical practices by setting clearer rules, such as deciding how many findings qualify for the division of research into separate articles and creating software to detect manuscripts which are thinly disguised repeat publications. Finally, the International Congress could install punitive measures, such as a one- or two-year suspension of publishing opportunities for those who abuse the privilege of being read. These measures would all improve the situation for readers and writers alike.

Unbuckling teaching from the production of research could take the pressure off medical and public health professionals and enhance both the quality of teaching and research produced. It is being acknowledged that enforcing academia to publish may be handicapping our system of education and weighting it down with marginal material[8][11][20]. Teaching in health care and research to support it are among the costliest undertakings in the world, and razor-sharp focus on efficiency would optimize use of scarce resources. Universities such as Cornell University have made a start by creating a still evolving cadre of Professors of Practice who are focused primarily on teaching and service while tenure track professors focus primarily on research.

Much more needs to be done. Measures to ensure research creates value need to be established. This can be achieved by creating an agreed-upon standard of the relevance of research and a rationale for efficiency to justify the considerable

resources being funneled into all this activity. ‘Publish for free and read for free journals [12]’ can be funded as an alternative to the OA publishing model. Many solutions can be worked out, once a firm resolve is created by the scientific community to divorce the financial interests which have hijacked publishing. Otherwise, it might well be a case of publishing, publishing everywhere, but nobody really reading it all.

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