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Commentary

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High-quality peer review saves lives–let's work together to care for our reviewers and evolve the peer review process

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Abstract

High-quality health-related publications have an important impact on driving improvements in global healthcare and so saving lives. Fundamental in ensuring the quality of published research, peer review systems and peer reviewers themselves are under significant pressure to deal with the increasing volume of new biomedical article publications globally. In this context, our understanding of peer reviewers' attitudes and requirements, the use of new digital tools to support the work of peer reviewers, and the identification of professional groups who are not already part of the peer review community are extremely important to support global healthcare delivery.

Keywords medical ethics, journalism, medical education & training, medical journalism, public health, peer review

In a preprint article released at the end of last year, authors Oviedo-Garcia, Aquarius, and Bishop describe a 'review mill' where a group of peer reviewers appear to have manipulated the peer review of research articles relating to obstetrics and gynaecology clinical practice for their own benefit and often using boilerplate responses in their reviews [1].

> *"In my honest opinion, the topic is interesting enough to attract the readers' attention."*

Although the exact frequency of review mill activity such as that described by Oviedo-Garcia *et al.* is hard to establish, this single topical example illustrates well that academic peer review faces an increasing list of challenges. From review mills to the overload of the current peer review system and its linked reviewer fatigue, through to the threats and opportunities that the use of artificial intelligence brings [2].

In this context, expert consensus is that peer review is a crucial part of the scientific research process and adds important value to the quality of published research information. High-quality published research is itself now well established to improve the quality of care, patient safety, and clinical outcomes [3, 4]. Consequently, peer review has profound implications for the lives of patients around the world, as well as for the integrity of the scientific record.

In the context of the clinical and academic importance of peer review globally, understanding the attitudes and activities of peer reviewers today is key to taking a pragmatic approach to identifying systemic problems with peer review, identifying practical solutions to these problems, and so guiding the evolution of even better peer review systems in the future. At Oxford University Press (OUP), we are fortunate to have large, diverse communities of highly experienced peer reviewers. As well as supporting those existing members of our extended team, we also invest in helping new peer reviewers develop their skills and experience in this crucial work. We recently published an extensive survey of our peer reviewers, the results of which have important implications for the progression of peer review systems at OUP and more broadly [5].

In our research, we received over 4000 responses from active peer reviewers, who had all reviewed anywhere between 1 and over 20 articles in the previous 24 months. We found that peer reviewers in medicine and health were more likely than other subject areas to have reviewed over 20 articles over the 24 month period [5]. Unsurprisingly, 94% of all our reviewers believe that the peer review process is important, or extremely important, in maintaining the integrity of journals [5]. Interestingly, around 75% of our peer reviewers said that they had not used any sort of artificial intelligence (AI) tools to support their peer review work to date. For peer reviewers in the OUP survey who did report using AI to support their reviewing work, the largest group were those who used the tools to help support the quality of their writing. Only a very small percentage of our reviewers (~7%) thought that AI could be used for more complex tasks such as identifying and reviewing relevant literature. There are important and very practical activities that OUP currently takes

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to support our reviewers' work based on these recent survey data and our broader understanding of peer reviewers' needs. In terms of reward and recognition, most of our reviewers, over 80%, listed recognition by our journals for their peer review activities, as well as being informed of the outcome of the reviewed article, as their preferred rewards. Of note, the OUP reviewers' experience of their work was positively impacted by interesting article content, a great digital platform to facilitate the reviewing process, and the use of a review template to guide and structure their responses. Training and guidance in peer review was also identified as important in improving the quality of reviews by 45% of our reviewers [5].

The Institute of Physics publishing group (IOP) has also recently released the results of their own peer reviewer survey [6]. The IOP survey received responses from around 3000 peer reviewers, and the results support our OUP data. IOP respondents agreed that feedback on the final outcome of the reviewed article was their most important reward for peer reviewing and that their experience of the process would be positively impacted by improvements to the IOP online review systems. When asked about the use of AI in peer review, the majority of IOP reviewers, 71%, had a neutral view or felt that AI could have an overall negative impact on scholarly peer review. In support of the OUP survey data relating to practical activities through which publishers can support reviewers, IOP reports a 60% increase in their current survey, compared to data collected in 2020, in the number of reviewers who view training in peer review as their most important requirement [7].

Another key data point from the IOP survey was the finding that almost 50% of respondents reported an increase in the number of review requests they had received [6]. These responses are not surprising in the context of the rapid growth in scientific publications globally [8], with over 40% more articles indexed in Scopus in 2023–2024 compared with 2013–2014 [9]. As many commentators have noted, one of the outcomes of increasing publication rates is peer reviewer fatigue [10], with reviewers struggling to keep up with the pressure of increasing numbers of requests, usually not aligned in terms of their timing with the peaks or troughs of activity in the reviewers' primary professional roles. While there are many calls for a reduction in the total volume of published papers [11], the reality remains that submissions to journals are still growing in number and that the use of AI by researchers has the potential to drive an explosion in the number of new articles submitted to journals.

A much-discussed potential solution to reviewer fatigue, although with little specific supporting evidence at this stage, is the use of AI to facilitate the peer review process. In this context, our data and the IOP's data have revealed very varied levels of enthusiasm, along with important levels of concern, about AI supported peer review [5, 6]. There is, however, a significant variation in attitudes and beliefs in this area, as illustrated by a recent report by the publisher Frontiers, where 53% of Frontiers reviewers stated that they had already used AI when peer reviewing [12]. In addition, the 2025 Wiley explanations report shows the general use of AI is rising rapidly, with the proportion of researchers responding that they use AI tools for research and/or publication-related tasks increasing to 62% from 45% in 2024 [13]. More clear in our experience is the rapid shift that is taking place in the norms around how peer review is done and that many individuals are now using new technologies irrespective of the policies that journals set. How the use of AI in peer review is perceived by those individuals may in turn vary depending on whether they are experiencing the process as an author or as a reviewer. An additional driver for these changes is the rapidly expanding catalogue of emerging products and services aimed at bringing AI into editorial and peer review processes.

An important additional solution to the use of technology to help with peer review overload, which requires further evaluation and exploration, is the purposeful expansion of the global peer reviewer pool. For example, a large community of clinicians already takes a very active role in developing the scientific record by helping publish new healthcare information as researchers, authors, and peer reviewers. However, many other clinicians do not engage in peer review at all, often because they view themselves as being '*clinical*' rather than '*academic*' in their roles, or because they are unfamiliar with the peer review process itself. This lack of clinician engagement in peer review is a real loss from the perspective of the global healthcare community and for the countless numbers of patients who benefit from information published in healthcare journals. In this context, and with appropriate training, clinicians who do not usually take part in the peer review process could extend their *clinical* role by joining the peer review community. Furthermore, most clinicians' primary role is to provide healthcare services in increasingly busy healthcare systems [14], and to do this, clinicians must maintain and develop their knowledge and skills throughout their careers. Peer review can form an important component of this continuing professional development and so help clinicians address this ongoing regulatory requirement [15].

The active investigation of our peer reviewer community's views and requirements through surveys such as the one described here, is foundational in our ability to understand and care for the community of clinicians and researchers who make our journals possible. In turn, and specifically in a healthcare context, the work our reviewers do to drive the publication of high-quality healthcare information is essential in protecting the reliability and accuracy of health-related publications, supporting clinicians caring for their patients and so saving lives around the world.

As editors, publishers, researchers, and stakeholders in the scientific community, we have an obligation to ensure that we advocate for the vital role high-quality knowledge plays in our society. Peer review has a critical role in this context. While we acknowledge how under pressure the peer review system is at present, we must also welcome discussion about the opportunities that exist to improve peer review in service of driving improvements in healthcare globally. We are in a time of flux, with rapid alterations in behaviors and technology's capabilities as a result of generative AI. Throughout this period of change, our duty as custodians of knowledge is to ensure that in the face of many challenges and disruptions, we find ways to respond that improve and protect the integrity and quality of published content for the benefit of all. The path forward is challenging, but we believe it is essential

to explore, to innovate, and to engage with reviewers to support the evolution of peer review and so protect the value and impact of published healthcare information in improving global healthcare in the years to come.

Author contributions

Charles Young (Conceptualization [equal], Writing—original draft [lead], Writing—review & editing [equal]) and Julia McDonnell (Conceptualization [equal], Writing—review & editing [equal])

Conflicts of interest

Dr Charles Young is Editor in Chief of Research Connections, and Ms Julia McDonnell is employed by Oxford University Press.

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Data availability

All data are available in the article.

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