



## Editorial

## Open Access: Is the Scientific Quality of Biomedical Publications Threatened?☆

## Open access: ¿está en peligro la calidad científica de las publicaciones biomédicas?

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In the last 20 years, the publication of peer-reviewed scientific journals has undergone a dramatic revolution as a result of the possibilities offered by Internet. The preferred format for scientific journals nowadays is electronic. The *Open Access* (OA) movement emerged about 10 years ago driven by the need to promote wider and more rapid diffusion of biomedical research results, particularly those financed by government bodies.<sup>1</sup> Another advantage of OA publishing is that articles can be downloaded from the appropriate website, free of charge for interested readers.<sup>1</sup> However there are some difficulties with this publication format, particularly in the case of OA journals created by individual groups of scientists who do not fall under the auspices of scientific societies. Here, there are still some reservations regarding the quality of the peer-review process carried out by these journals.

At the end of the 1990s, some scientific societies producing renowned international journals, such as the *British Medical Journal*, decided to offer free access via the web to the contents of all their journals, in an OA format.<sup>2</sup> They were followed by other scientific societies in regions such as Latin America and Japan, where many journals, all of which are free access and without costs for the publishers, are available on platforms such as *SciELO* and *J-stage*. Similar initiatives have been undertaken by the publishers *BioMedCentral* and *Public Library of Science*, who pioneered the use of *article processing charges* (APC), with estimated average charges of up to US\$3000 for the publication of articles. However, these fees can be an obstacle in many fields.<sup>3</sup> Finally, there is a less popular hybrid form by which classic subscription journals (accessed via individual subscription or via hospital or university libraries), after accepting manuscripts, offer the authors the possibility of permitting free access to their papers, once published, on payment of around US\$3000.<sup>3</sup>

One of the greatest difficulties that OA publications have to address is the possibility that the peer review process may be weakened, leading to a deterioration in the quality of the scientific content. One strong motivation for this could be the business potential for the publishers, derived from the high costs imposed

on authors for publishing their articles in OA journals. It is not unreasonable to think that publishers with an OA platform, particularly those which do not form part of a medical or scientific society, could place financial profit above quality and rigor in the content of their journals. Of course, this is a question that is being actively debated among the members of the scientific community in their various roles as authors, reviewers and editors. It is worth mentioning that, in recent years, the number of OA publishers in developing countries has increased enormously, with the aim of providing authors in these regions with a fast and flexible way of publishing their articles in their journals.<sup>3</sup> This arises from the need of the authors to rapidly consolidate their scientific careers in order to gain a stable professional position within their institutions. Accordingly, the underlying financial interests increase the possibility of journals developing disregard for ethical considerations, fraud and/or plagiarism by authors and editors. These are determining factors that may seriously damage the classic peer review process and consequently, the quality of scientific publications. In the case of medical journals, there may even be indirect repercussions on clinical practice.

In this scenario of extremely rapid technological and commercial change, regulatory bodies should be formed to ensure scientific quality and guarantees that studies are carried out with the necessary methodological and ethical rigor. In recent years, commendable work has been carried out by national and international institutions in this respect, with the creation of clinical practice guidelines and consensus documents among scientific societies, even those located on different continents. Ethical codes have been produced, regulating aspects as wide-ranging as the clinical management of patients, obtaining and storage of biological samples, plagiarism and fraudulent data, the need for correct statistical analysis and the truthful presentation of research results, including clinical trials. Despite the obvious financial benefit derived from the OA formula, these principles should continue to be non-negotiable for the professionals involved in the process of evaluating the contents and in deciding whether to publish in OA journals.<sup>4,5</sup> The immediacy and scope of the Internet in the dissemination of any material is a double-edged sword with the potential to undermine the classic peer review process, and ultimately, quality and scientific rigor. This is a particular risk for OA publications and the reason why the entire scientific community must be aware of the situation, already strongly felt in some settings, and act diligently in order to

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ensure that priority in OA publishing is always given to quality and good practices over potential financial profit.

Society in general, and biomedical science in particular, is facing the considerable challenge of new Internet and social network-based technologies. The potential for the diffusion of science, both in immediacy and in scope, is enormous. However, it is not free of risks. In any publication format, we investigators and editors of scientific journals must always stand up as guarantors of methodological rigor, commitment, privacy and quality, with the aim of protecting the ethical principles established over the years by the efforts of the scientific community from violation by any attempt to make any profit other than the purely scientific and medical. If we manage to work within this axiom, regardless of the geographical and cultural environment, any doubts about the reliability and veracity of material published in OA journals will be resolved.

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