

Publishing in open access era: focus on respiratory journals

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Abstract: We have entered an open access publishing era. The impact and significance of open access is still under debate after two decades of evolution. Open access journals benefit researchers and the general public by promoting visibility, sharing and communicating. Non-mainstream journals should turn the challenge of open access into opportunity of presenting best research articles to the global readership. Open access journals need to optimize their business models to promote the healthy and continuous development.

Keywords: Open access; respiratory journal; copyright; peer review; processing fee; business model

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More than 1.8 million articles are published in 28,000 active peer reviewed journals every year. But the huge publishing need still has not been fully met. Open access journals publish peer-reviewed scholarly articles which are online available to readers, in digital form, generally without charge or copyright restriction. Readers can search databases without paying fee and can lawfully read, print, cite and distribute the full text of copyrighted articles. Open access journals have gained momentum and global acceptance. Medical journal publishers need to be fully aware of the impact of open access on health care today since open access means a lot to the medical community.

Open access is imperative and debatable

Open access publishing originally appeared in the second half of the 20th century and gained momentum with the appearance of the internet (1). The first free open access peer-reviewed journals and free scientific online archives appeared in the late 1980s and early 1990s. Almost two decades later, the impact and significance of open access is still under debate, with its organization and implementation questioned.

Still the speed of growth of open access journals has exceeded conventional subscription-based journals. A study in 2013 demonstrated that 7.9% of all peer reviewed scientific articles were published in open access journals (2). In the area

of medicine, the impact and quality of open access journals have become comparable to traditional journals.

There is ongoing debate whether open access journals are actually beneficial to scientific community (3). One of possible disadvantage of open access is that journals publish articles with no peer review or low level of quality control in the pursuit of profit.

Through promoting visibility and sharing, researchers and the general public actually benefit from widely available knowledge that had been restricted in traditional publishing times. Open access leads to increase in citations, improvement of article quality, and acceleration of research progress, productivity, and knowledge translation.

In medicine practice, the potential and benefit of open access publishing is more significant. Family practitioners and specialists in remote geographical area who can't get recent research findings through institution-paid subscriptions thus can reach new scientific knowledge and translate into good practice (4-6).

Journals need to face the challenge

The publishing world realm is changing and the premier journals are facing challenges and competition. For instance, more than 5,000 open-access journals have been launched since October 2010. These journals are attracting a growing share of submissions.

Most non-mainstream journals turned the challenge of digitization and open access into opportunity of presenting best research papers to the global readership (7). Making full-text of its articles freely available online, getting archived in PubMed Central can be the drivers for the scientific quality and impact of the journals.

Among 187 Korean open access medical journals indexed in the KoreaMed database, about one-third of the journals are archived in PubMed Central owing to the improved quality of editing and editorial policies encouraging open access (8). A recent study demonstrated that the move toward open access is favored and sponsored by universities and professional societies in Latin American, Eastern European, and Asian countries (9).

In developed countries, the open-access policy is also strongly supported primarily by large commercial publishers using various business models. The Directory of Open Access Journals (DOAJ) database lists more than 8,000 open-access journals, the United States ranks first with its 1,302 open-access journals (10).

In UK, national strategy has been adopted in 2012, allocating a grand proportion of research funds to open-access publishing and archiving papers in publicly accessible digital repositories. The Wellcome Trust, one of the major research funders in UK, has been allocating funds for open access since 2007. The lancet journals have endorsed the strategy and given options for open access.

The BMJ Group launched *British Medical Journal (BMJ)* Open journal in 2011, which got indexed by PubMed and Web of Science, archived more than one thousand quality items in PubMed Central, and received its first journal impact factor of 1.58 in 2013. *PLOS One*, an open-access journal published by Public Library of Science, has published more than 69,000 papers, archived in PubMed Central with the latest IF of 3.73 and total cites of 133,246 (11).

These successful examples illustrate the viability and importance of the new publishing model (12,13). Open access provides any users online access to peer-reviewed articles and permits free distribution, indexing, copying and lawful reuse without violating the copyrights. We need to embrace the evolution of publishing mode and face the challenges that open access publishing era has brought us and turn them to opportunities of development and quality improvement.

There are diversiform models of open access

Depending on the uttermost provider of articles, OA is

divided into green, gold and hybrid OA and is furthermore categorized into subtypes by sources of funding. Open access journals need to secure funds alternative to subscription and pay-per-view fees, maintain high technical quality and online readability of the output, and permanent archiving by prestigious bibliographic databases.

Green open access offers free access to articles by authors publishing their research findings on institutional or central repositories like PubMed, or simply depositing peer reviewed post-prints on other open access websites this is what is called self-archiving.

Journals which have institutional or government funding can afford to implement diamond or platinum open access model from the very beginning, not charging fees to authors or readers and providing no compensation to expert reviewers.

In 2009, 21.7% of medical publications were openly accessible, 13.9% of them were published through open access journals (14). Medical journal publishers prefer gold open access. Gold open access provides immediate free access to articles without embargo period.

Some publishers successfully implemented the gold open access model through mandating payments for publishing and opening access without undermining the quality of published papers. Lowering publishing standards attempting to increase processed payments may jeopardize the quality of this kind of gold open access journals.

Journals published by professional societies generate revenue from advertisements and subscriptions. Hybrid open access is the most suitable publishing model for this kind of journals. Paid open access and traditional subscriptions composite the revenue (15).

Most large publishers of traditional journals, such as Oxford University Press, Springer, Wiley, Elsevier, implement the hybrid open access model (16). Researchers who are publicly funded can pay for open access to their papers, while those who do not have fund to pay for open access can choose traditional publishing mode. The possibility of unethical prioritization of paid open-access papers and rejection or delay of non-paid papers can't be eliminated.

Optimize the business models of open access publishing

When journals provide full accessibility of articles without charging the processing fees, then who pays for the published articles. Besides depending on institutional and

governmental funding, other source of raising fund deserves exploration and consideration.

The cost of publication of open access journals is not reduced even if paper and postage costs are eliminated, the costs are replaced by costs associated with online submission-and-review systems and hosting platforms (17).

There are emerging business models for open access journals. One third of open access journals charge publishing fees, while others receive institutional, governmental, or third-party funding (18-20).

The costs of publication of gold open access journals are covered by author processing or publication charge, and the costs of green open access journals are covered through subscription fees before the embargo period.

Some libraries cancelled subscriptions to small journals in niche areas and those from independent association or university publishers. If institutions are not mandated to pay high subscription fees for non-access journals, they may have spared funds to pay publishing fees and cost of dissemination of their research findings.

When it comes to respiratory journals

Nowadays, there are more and more respiratory journals published worldwide. Open access journals constitute the majority of them. We analyzed the open access mode, publisher, acceptance rate, impact factor, time between submission and final publication, business model of open access respiratory journals published globally. We aimed to investigate whether open access and being published by professional publishing groups are actually beneficial for respiratory journals.

We found that open access respiratory journals have relative higher acceptance rate and less time between submission and final publication than conventionally published journals. For example, *Journal of Respiratory Medicine*, a peer-reviewed, open access journal which publishes original research articles, review articles, and clinical studies in all areas of respiratory medicine, currently has an acceptance rate of 24%. The average time between submission and final decision is 57 days and the average time between acceptance and final publication is 44 days.

Authors have broader options for open access journals publishing. *Respiratory Medicine* is published by Elsevier, and it offers authors option to publish their research. Authors can choose to pay the open access publication fee to allow their articles freely available to wider public, or do not pay any fee only allowing their articles available

to subscribers as well as developing countries and patient groups through access programs of Elsevier. As to *Primary Care Respiratory Journal*, for all accepted Protocol Summary papers, there will be a one-off author charge of £500, payable on manuscript acceptance.

Respiratory journals published by large publishing groups have some advantage over those published by societies or universities. For example, the research published in Biomed Central open access journals is free, not only on the journal's website but also via PubMed Central, the National Institutes of Health's electronic archive of full text articles, UK PubMed Central and other national archives, which means anyone with Internet access can read the research. Average full text downloads are 250 per article per month. All research articles published in BioMed Central's journals are included in PubMed.

Professional societies also actively seek cooperation with publishing groups to popularize their publications. *European Respiratory Journal (ERJ)* is the official journal of European respiratory society (ERS) and is distributed by Maney publishing. European Respiratory Society offers an optional service *ERJ Open* that enables authors to ensure that their final published contribution is made available for anyone to access online.

Primary Care Respiratory Journal announced that it will be published by Nature Publishing Group from April 1st. Accepted summaries of the journal will be listed on Medline/PubMed and indexed by Thomson Reuters ISI. They will be available to readers as an open access full text manuscript free of charge.

To sum up, scholarly publishing and information obtaining in developing countries is still dominated by traditional print format. Print format journal publishing is expensive and inconvenient to distribute. Optimized open access and publishing model have enhanced the impact and visibility of scientific peer-reviewed respiratory journals. There is urgent need to build infrastructure in publishing top-tier, open access respiratory journals.

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