

Biomedical Journals – Chasing Excellence in Order to Survive

Lidija Andrijašević^{1,2}, Hrovoje Barić^{1,2} and Srećko Gajović^{1,2}*

¹University of Zagreb, School of Medicine, Šalata 3, HR-10 000 Zagreb, Croatia

²Croatian Medical Journal, Šalata 3, HR-10 000 Zagreb, Croatia

Publishing science papers, biomedical papers in particular, was almost from the very beginning accompanied by an exponential growth in the number of publications and medical journals, a trend also present today (1,2). The total number of published papers is estimated to be about 50 million and a search on PubMed for articles published between January 1, 2011 and January 1, 2012 yields a result of 1 094 945 papers – more than two publications per minute (3). The benefits of a vast and rapidly growing number of both biomedical journals and publications are controversial, highlighting the need for examination of the current status of the biomedical scientific publishing.

Under pressure of the increasing competitiveness in the global medical community, where professional and academic progress is, more or less, assessed through publishing productivity, most medical professionals are forced to write papers whether they like it or not. Publishing equals existence – a notion best described in the century-old 'publish or perish' mantra. Besides high-quality publications, it results in overproduction and overpublication of low-quality papers in medical journals. Former editors of reputable medical journals reported the existence of poor science in medical journals, deficient peer review process, insufficient scientific training of medical professionals, *etc.* It is estimated that in most journals, the number of published papers that reach minimum standards of scientific soundness is lower than 1 % (1,4). The same pressure results in a motivation shift of medical professionals. Although expected to be altruistic, in reality their motives are quite different and 'usually subordinated to the more powerful forces of institutional motives driving global research enterprise' (5).

In the 'publication wilderness', there is an ongoing struggle for survival since 'editors survive by accepting good articles' (6). Editors have a difficult task to balance between the demands of authors and readers: out of the vast number of manuscripts submitted daily, they have to choose those that bring novelty, meet the criteria of originality, scientific soundness and relevance, have a high probability of being cited and are not a product of a sole attempt and wish of the authors to publish 'anything' in order to advance their careers. The efforts put in by editors in choosing the right article, appropriate reviewer and finally, reaching a decision about manuscript's destiny are not always recognized by the readers, authors and reviewers. These decisions are key to all other aspects of journal's success – today mostly measured by Impact Factor (IF) and indexing.

Although there are debates about the reliability of IF as journals' quality measure, it still remains the most widely accepted objective and numerical value of journals' quality (7). Using the number of citations and the number of published articles, it is very simple to calculate the success of a certain journal and its editorial team in choosing the right manuscripts for publication. If publications of a journal are cited by other scientists, then this journal must have certain importance.

Indexing is another important indicator of journal's recognition by scientific community. When accepted as a member of certain indexing databases, the journal gains credibility and importance. This makes the journal more desirable for the authors – they are more likely to publish in this journal and will submit better articles, which increases the quantity and quality of the articles that the journal publishes. Of course, the authors are also more fond of citing the articles published in eminent and appreciated journals, and this leads to a well-known circle of indexing and IF value – once accepted as a good journal by scientific community, there are high chances of staying in this class. This is why many editors and authors now wonder if IF and indexing are true measures of journals' importance. Other suggested markers are Hirsch index, total citation rate, cited half-life, Eigenfactor, Article Influence scores, immediacy index, and SCImago Journal rank. Although conceptually diverse, these are all the tools used to measure the number of citations of published articles.

Together with these measurable parameters, there are other relevant factors that contribute to the importance of a journal, one of them being the size of the general readership (especially for general medicine journals). How many

doctors/scientists/patients/students actually read the published articles? This is an important, but generally neglected aspect of journals' mission – to bring novel results closer to the general readership, not just experts in a certain field who search for the articles mostly in indexing databases. This is where the new strategies in journal publishing compete to find the best solution. One trend involves popular social networks – Facebook, Twitter, Google Circles, YouTube – they are all more likely to be accessed by occasional readers than through indexing databases. Although social networks could negatively influence the perceived seriousness and reliability of a journal, they would undeniably increase the number of readers, and make research results, previously limited to a small group of experts, more accessible to the global readership. This helps to revitalize one of the main goals of scientific journals – to announce and release important findings – to everybody interested. Whether the content will be free or charged per view, it remains on publishers to decide. Still the key is to make the best articles visible and provoke interest in readers – they will then read/buy this article, information will reach its end-user and the journal will fulfill its main function.

References:

1. R. Smith, The trouble with medical journals, *J. Roy. Soc. Med.* 99 (2006) 115–119.
2. H. Oldenburg, Epistle Dedicatory, *Phil. Trans.* 1 (1665) 1–22.
3. A. Jinha, Article 50 million: An estimate of the number of scholarly articles in existence, *Learned Publishing*, 23 (2010) 258–263.
4. M. O'Donnell, Why doctors don't read research papers: Scientific papers are not written to disseminate information, *BMJ*, 330 (2005) 256.2.
5. N.H. Al-Azri, Do we need a new medical paradigm?, *Oman Med. J.* 27 (20120) 256–257.
6. S. Lock: Survive as an Editor. In: *How To Do It, Vol. 1*, British Medical Association, London, UK (1987).
7. T.C. Ha, S.B. Tan, K.C. Soo, The journal impact factor: Too much of an impact?, *Ann. Acad. Med. Singapore*, 35 (2006) 911–916.

