

Achieving a Lasting Impact

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ABSTRACT

The SMJ begins its forty-first year in the new millennium. Its development has been shaped by seven editors that spanned this length of time. In the last three years, the SMJ has modernised its layout and content. There is also a full-text version on the SMA website.

The bottom line of a journal is scientific quality and wide readership. The calculated impact factor promoted by CSI is but an imperfect measure of its quality and impact. To achieve a true impact in shaping practice behaviour, the strategy is to consider the three parties: the reader, the writer and the editorial board.

The contents should be a balance of what the readers find useful for their practice and expert opinions. Writers need to be persuaded to make the local journal their choice destination. The editorial board can play an effective role by helping writers improve scientific content and write quality review articles. Helpful directions for writers, training sessions for them and a rigorous peer review system are underpinning factors to achieving an impact. Finally, a staple of editorials, original papers, case studies and review papers should all be considered.

INTRODUCTION

With the entry into the new millennium, the Singapore Medical Journal (SMJ) begins its forty-first year of existence. Throughout this length of time, the journal had a total of seven editors. Together with their respective editorial teams they have documented the important developments of the day. It must have been a struggle to have enough contributors, resources and funds to keep the journal going from year to year. They richly deserve the tribute that Dr Rajasoorya has paid them in his editorial in this issue of the SMJ⁽¹⁾.

For the last three years, we have been fortunate to have the good leadership of Prof Kua Ee Heok as the editor of the SMJ. He has modernised its layout and content. Under his tenure too, the SMJ has a full-text version on the SMA website. I would like to acknowledge and thank him for his contributions as he passes the baton to Dr Rajasoorya as the new editor of SMJ in the new millennium. Thank you, Ee Heok and welcome aboard Raja.

Citation rates and impact factors

The Science Citation Index (SCI) and Journal

Citation Reports (JCR) publish a number of measures of citations annually for all journals indexed by Science Citation Index⁽²⁾. One is the citation rate. This is the total number of citations of a journal in a particular year and it gives a measure of how often a journal was cited by current authors.

The second measure is the impact factor⁽²⁾. This is the number of current citations of source items published in the following two years divided by the number of all articles (excluding editorials, letters, news items and meeting abstracts) published by that journal in those two years. JCR also ranks journals by their impact factors and also by the citation rates.

The impact factor (IF) is appealing as a measure of impact of a journal. Its usefulness has however been severely criticised. Seglen PO⁽³⁾ mentions no less than 21 limitations associated with its use. Citation analysis probably provides a crude method of assessing the quality of publications.

One shortcoming is the fact that citations of source items are limited to the following two years. Papers inspired by a source article and produced at a later date will not be counted. IF will favour research that generate many short-term studies⁽⁴⁾.

If writers frequently cite one another in the same journal, the IF will also go up. A study of 15 reputable journals by Hansson⁽⁴⁾ showed that quality plays a small part in determining IF. The number of citations is more dependent on citation habits [which he coined as pattern factor (PF)] of writers. Indeed, the correlation between PF and IF has a correlation factor as high as 0.89, leaving journal quality to account for at most 11 percent of variation of IF.

Review journals have by and large the largest impact factor because review articles generally receive more citations than original articles, whereas shorter communications such as case reports are cited less often. Specialised research may not be widely cited but may be important. Popular journals may rank poorly in the citation list but may be widely read and considered to be important by the scientific and clinical communities. Papers on health care policy and health services research may well shape future practice but may not be very much cited in scientific journals. Citation frequency may also depend on variables such as the reputation of authors published and controversial subject matter⁽²⁾.

Seglen⁽³⁾ also showed that the widely assumed idea that publication in a high impact journal will enhance the impact of an article (the "free ride" hypothesis) is

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false. His data showed that such journals do not offer any free ride. The citation rates of articles determine the journal impact factor (a truism illustrated by the good correlation between aggregate citation rates of articles and aggregate journal impact found in his data), but not vice versa.

The bottom line

Hence, the impact of a journal needs to go beyond trying to achieve a high calculated impact factor which may be flawed by various limitations.

What is true is the bottom line of any sustainable journal is that it delivers scientific quality and enjoys wide readership. Hopefully, its pages will have the desired impact of changing practice behaviour positively. Such a desirable outcome requires a strategy that considers the reader, writer and editorial board as important underpinning factors.

The reader

A paper in JAMA by Lundberg et al in 1998⁽⁵⁾ described an assessment of the extent of agreement between topics identified by experts and by readers of JAMA as most important for publication. The results were startling: expert opinion and that of the readers differed widely. The top ten choices of the readers were: ageing, cancer, reducing error in medicine, atherosclerotic heart disease, obesity, clinical practice guidelines, alternative medicine, children's health, managed care, and critical care medicine.

The experts' final rankings were managed care, death and dying, genetics, quality of care, violence, ageing, caring for the uninsured/underinsured, outcomes improvement/research, HIV/AIDS, and cancer. Thus, the agreement were at most on three topics out of ten.

We have not conducted a similar study in Singapore, but I would not be surprised that the readers' choice here may be quite similar to those of the readers of JAMA. The final list of articles should be a balance between readers' and experts' choices.

The writer

The task ahead is to work towards the SMJ as a local and regional journal that writers will contribute some of their best papers as their first choice destination for their hours of work⁽¹⁾. Seglen⁽³⁾ has already dispelled the myth of a "free ride" of submitting a paper to a high impact journal. The alternative of aiming for good scientific quality and publishing it in a local journal may be better. It is more likely to be relevant and therefore empirically should be more likely to be cited.

In the context of scientific quality, Angell⁽⁶⁾ writing in the *Annals of Internal Medicine* in 1986, offered authors several observations of what not to do in succumbing to the pressure to publish or perish: Do not undertake trivial studies because they yield rapid results; needlessly report the same study in instalments; report a study more than once; and list as authors people only marginally involved in the study. He also suggested that an effective way to reduce such behaviour is to place a ceiling on the number of publications that can be considered in evaluating a

candidate for promotion or funding. Each publication, he argues, would then receive commensurately more attention, both from the researcher and from those judging the work.

Jones⁽⁷⁾ has even worked out a quantitative measure for each of an author's published articles in those who need to publish in order not to perish. Let N be the rank order of the author in question on an article and let M be the total number of authors in that article. The score for the author would be $1/N + 1/M$. The sole author of an article would receive a score of 2 (which is worked out from $1/1 + 1/1 = 2$). Two authors would share a total score of 2.5 (which is worked out from $1/1 + 1/2 = 1.5$ for the first author, and $1/2 + 1/2 = 1$ for the second author). As more authors are added, the total score to be divided among them would increase slowly, so that the score assigned to each preceding author would decline. A score like this could be summed for all of an author's articles in various publications, perhaps weighted according to the types of publications, and the total score could be converted to a rate by dividing it by the period under consideration (e.g., 3 years, or an entire career). Because scoring methods such as this one emphasize the number of articles published over the substance of those articles, perhaps a factor representing the importance of the articles should be included in the calculation. The number of citations of each article, who cited it and why could help determine importance. A simpler method would be to look at the best one, two or three articles of the writer's own choice for each year and scrutinise these.

The editorial board

The editorial board can play an effective role by helping writers improve scientific content and write quality review articles. Helpful directions for writers, training sessions for them and a rigorous peer review system are underpinning factors to achieving an impact. Papers on techniques of authorship, study design, data collection, choice of statistical tests and writing papers should be published time and again in the journal.

The main reason for undertaking trials is to inform and alter medical practice. Yet trialists often pay inadequate attention to reporting their studies⁽⁸⁾. Findings from many studies on RCT reports in obstetric, and general medicine journals or on specific conditions like stroke, breast cancer or rheumatoid arthritis show a recurring theme. Information on randomisation, sample size estimates, P values and confidence intervals are either insufficient or confusing.

Bath et al⁽⁸⁾ suggest that journal editors change instructions for authors to cover the reporting of RCTs to ensure that issues which affect the understanding of a paper and how the study was undertaken, whether by referee or general reader, are adequately described. Referees should then be asked to judge papers in this context. The CONSORT statements⁽⁹⁾ present guidelines to trialists, editors and referees for improving the quality of reporting of RCTs. It would be useful to refer to these statements time and again.

Journal content

Does journal content matter? It does. There must be a variety of subject matter to form a staple: editorials, original articles, case studies and reviews. Occasionally, articles on authorship and writing papers should also be included.

Editorials should focus on timely comments on subjects of topical interest. Original articles add new information to our existing knowledge databases. Attention should be devoted to report trials adequately so that they can inform and guide change in medical practice.

Case studies are useful. They provide an opportunity to revisit the clinical features, investigations, therapeutics and management and to add to one's knowledge base one or more of the following: new information about the condition, pitfalls to avoid and tips for handling such cases. What is also valuable is that they can interest both novice and veteran at the same time because each can see in the case what challenges him or her at the level of clinical acumen that the reader possesses.

Finally, review articles are important for readers to update and summarise current knowledge. Well written, they are of major impact to the reader to acquire a good grasp of current knowledge, be it to fill a lacunae or to revisit a topic of common importance like cancer, infection, inflammation, therapeutics or continuing care. Besides being read by the general practitioner, such articles are also relevant to specialists to keep up on the broad front of medicine outside their narrow, expert areas. The review articles can be made to earn CME points in continuing medical education programmes. Such a use of review articles is already in place in many of the major journals on both sides of the Atlantic and in Australia. We should follow suit.

The areas of medicine upon which review articles are written can be rotated. These can be kept small

by lumping rather splitting. Taken this way, the whole field of medicine can be categorised into the following six areas: (1) general practice/family medicine and public health; (2) medicine related disciplines; (3) paediatrics; (4) obstetrics and gynaecology; (5) surgical disciplines including ophthalmology and ENT, and (6) others which can include clinical methods, therapeutics, pharmacology, basic sciences, pathology and even alternative medicine.

CONCLUSION

Achieving a lasting impact for the SMJ is a goal that the Singapore Medical Association has set for the new millennium. It should be possible to do so by considering the reader, writer and editorial board as the underpinning factors.

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