LETTER TO EDITOR

Evidence-based Medicine, Cochrane reviews and Open-access Journals

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Sir,

We read with great interest the letter by Liew *et al* [1] in this journal regarding the access to medical journals in Malaysia. Although this article reveals interesting and important viewpoints, there are some areas for discussion upon which we would like to expand.

First, the authors raised an importance of evidence-based medicine (EBM) and mentioned 2 examples: the risky sleeping position for babies and the side effects of anti-arrhythmic drugs. They concluded that "doctors' clinical judgment is not infallible and clinical practice needs to be informed by good research evidence." In 1996, Sackett *et al* [2] originally defined EBM as the conscientious, explicit, and judicious use of "current best evidence" in making "decisions" about the care of "individual patients." Hence, apart from the research evidence, the other 3 components of EBM are also important to medical decision for individual patients: (1) clinical/patient circumstances, (2) patient values and preferences, and (3) experience and judgement (Fig. 1). It is a common misconception that sound clinical decision is dictated mainly by scientific evidence, especially high-level evidence such as randomised controlled trials (RCTs), systematic reviews and meta-analyses [3].

Second, Liew *et al* [1] seem to emphasise the importance of Cochrane Library, which is the main resource of Cochrane Reviews (CR). However, CRs are not the good resource of scientific evidence either. Recent studies have shown that the amount of CRs addressing surgical questions and their current usage remain low [4,5]. Our systematic review on osteoradionecrosis of the jaws using all levels of evidence contributed to results different from those in the CR [6,7]. The explanation for these is that CRs included only RCTs, but many surgical questions cannot be answered by RCTs. Moreover, RCTs represent an effective approach for a group of similar patients with a particular condition which may not be applicable to every individual or condition [3,6-8]. The quality and reliability of clinical trials and systematic reviews can be worsened by several factors, such as conflicts of interest from industry [9] and publication bias [8]. Once a systematic review include RCTs of poor quality, its quality will also be poor (so-called "garbage-in garbage-out phenomenon") [3]. Hence, data extracted from CRs or any systematic reviews of RCTs should be interpreted with caution. Their results should not be applied directly to clinical practice.

Lastly, the author discussed about open-access (OA) journals. It is true, as stated by Liew *et al* [1], that many OA journals have high impact factors (IF), but many clinical questions are found in subscription-based journals only. A recent study using logistic regression analysis suggested the trend of a statistically significant increase in citations of high-quality researches in OA journals [10].

Indeed, it does not matter whether the journal's IF is high or low. Articles published in an OA journal may attract more readers than those published in "Science" or "Nature". However, a wider readership may not always increase citations and the journal's IF [11,12]. Recently, Turk [13] found that there were 18 Slovenian OA journals, but only 10 of which were indexed by Slovenian and international bibliographic databases. The quality of these journals was uncertain because "none" had an impact factor. Another comparative study showed that journal articles were cited more frequently, if the authors had previously published highly cited papers, were members of large teams of authors, or published relatively long papers. OA was unlikely to increase citations per publication unless the authors are invited to write book chapters – OA books (or their chapters) were cited more than OA publications [14].

This may be a reason of publication bias (or "submission bias" in this case) that authors of a high-quality research prefer to submit their work to a journal with higher IF. For example, PhD candidates in European countries usually need to publish their works in a high-ranked journal as a university requirement before graduation. A subscription-based journal is more attractive when it has higher IF than other OA journals in the same field.

IF of OA journals would not have a significant meaning for authors, if the authors (or institutions) strived for dissemination of research results [11]. Unfortunately, many European universities and institutions still measure the productivity of their academic members based on the numbers of international publication in peer-reviewed journals with high IF. This index, as a sign of scholarly recognition, has also been used to consider whether a person

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is qualified for the new academic title, such as Professor and Associate Professor (*"senior lecture"* in the United Kingdom; *"Privatdozent"* in Germany; *"maître de conférence habilité"* in France). Until now, there has been no metrics to assess usability of a journal for disseminating research results [11].

For some details on EBM and publication bias, we refer interested reader to our recent publications [3,8].

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