

## International visibility of Brazilian research output in public health

The health sciences are currently a cutting-edge scientific area in the world, due to their growing presence in various fields of knowledge, ranging from the so-called hard sciences to medicine, epidemiology, sociology, and political science. Not surprisingly, science databases experience difficulties in classifying the health sciences in broader categories of knowledge, like science or sociology.

Brazil currently ranks 13<sup>th</sup> in overall scientific output worldwide, according to the ISI-Thomson Reuters-Web of Science (WS) database. Some scientific areas in Brazil are above this average, and others below. Amazingly, Brazilian output in the health sciences occupied third place worldwide in 2008 according to the WS, surpassed only by the United States and England. In fact, in a recent survey we conducted on Brazil's performance in various areas of science, we confirmed that the health sciences lead the country's classification in the WS. Other important areas of Brazil's scientific output, like parasitology and forestry and soil engineering, are classified below this position. In the last five years, 1,745 Brazilian articles in the health sciences were identified in the WS. Of these, 461 (26.4%) were published in seven Brazilian journals, in the following order: *Cad Saúde Pública* (232), *Rev Saúde Pública* (157), *Mem Inst Oswaldo Cruz* (31), *Braz J Med Biol Res* (17), *Arq Neuropsiquiatr* (14), and *Rev Inst Med Trop São Paulo* (10).

The bad news is that in 2009 the number of citations of articles in public health published by Brazilian authors in 2008, an indicator of quality and visibility, was 0.95, or last place among the 20 top countries in sciences according to the WS. There was a major drop in this indicator from 2008 to 2009, from 1.88 to 0.95, even as the number of Brazilian journals in the WS increased from 64 to 103, the largest increase in this database in both absolute and relative terms. This decline in Brazilian output occurred in other scientific areas as well. If we consider that the new Brazilian journals showed low international visibility, it is easier to understand this decline in citations per article. Another explanation offered by some researchers is that various research funding agencies in Brazil are pressuring increasingly for higher publication rates, resulting in worse average quality in the articles. It is possible that both factors are contributing to the drop in the number of citations per article.

The language barrier is frequently cited as a disadvantage for authors whose first language is not English (Meneghini R, Packer AL. *EMBO Rep* 2007; 8:112-6). Most journals demand quality English, and authors turn increasingly to professional translators and reviewers trained in science writing.

The use of a language other than English in scientific articles tends to attract less attention from the international community. On the other hand, the interest raised by an article in the health sciences among the general public and other professionals outside the scientific field can serve as an incentive for editors of science journals to publish articles in the national language. To avoid this dual problem, the articles could be presented in both English and the national language. The disadvantage of the large space required by this system could be offset by using the bilingual format only in the journal's online version (currently available in nearly 100% of the journals, whether through open access or pay-per-view). SciELO-Brazil, a meta-publisher currently working with 207 Brazilian journals, launched 15,640 open-access articles on the Internet in 2008, 42% of which in English. Not surprisingly, the articles in English were published in the Brazilian journals most represented in the Journal Citation Reports-Thomson Reuters and WS, and in the journals with the highest citation indices.

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