# Reviews and guidelines: Evidence of progress and a starting point for standardization and changes

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Brazil is on a course of high development and progress, a fact shown by the media, and proven in economic means and world rankings. In scientific terms, this can be seen in previous editorials of the Revista Brasileira de Hematologia e Hemoterapia (RBHH) and by checking the Scimago Journal Rank (SJR - www.scimagojr.com). We note that the scientific production of Brazil is increasing rapidly with the forecast that it will be one of the top ten science-producing nations in the not too distant future [1,2].

Different to other countries with large and high-quality scientific production, the history of Brazil is relatively young with the first real steps in the science and technology sector being taken at the beginning of the 1950s. At this time, two government institutions with mandates directed towards scientific development, the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES) and the Conselho Nacional de Pesquisa (CNPq), were created. Additionally, the research funding institution, Financiadora de Estudos e Projetos (FINEP), was founded in the late 1960s. Soon after, in the 90s the research support foundation of the State of São Paulo, FAPESP, a model for other Brazilian states was established.

The data published in a recent work by Almeida & Guimarães on aspects relating to the increase in scientific production in the country are used in this report[3]. When we look back at the scientific production in Brazil in the period between 1981 and 1985, we see that 11,560 documents were published. This placed Brazil in the 24$^{th}$ position in the world ranking with a percentage of around 0.47% of the global scientific production. When these data are compared with those from the period of 2006 to 2010, the publication of scientific papers increased to 132,301 and Brazil jumped to the 14$^{th}$ position in the world ranking with a global share of 2.45%. The analysis of these two periods indicates an 11.4-fold growth in the scientific production of Brazil. So the scientific production of Brazil has grown at around 10.7% per year, that is five times above the world average[3].

One category of scientific communications that is considered central to readers is review articles. Review articles are one of the most read and cited communications and of great importance to the academic and scientific community. Usually written by experts in the field, in the past they gave more than one opinion on the subject which were supported by references collected with the purpose of showing the honesty of the authors' interpretations. These were non-systematic reviews with discursive narrative features. Today this type of review has little scientific value and has been replaced by systematic reviews that use methodological research strategies to search scientific databases for the answers to specific questions originating from other studies in the literature. The main proponent of this type of work was the Cochrane Foundation (www.cochrane.org) which is present in many countries including Brazil (www.centrocochranedobrasil.org.br). In this type of review, investigations are based on a design method with questions concerning the problem or patients (P), intervention (I), comparison (C) and evolution (O), that is, evidence-based medicine (www.cebm.net). An example of this are the reviews available from the Cochrane Foundation, the Brazilian Medical Association (www.projetodiretrizes.org.br) and the review on chronic myelogenous leukemia published in RBHH[4]. Another form of systematic review is the meta-analysis in which a quantitative analysis is made together with a search for statistical significance on a given situation which identifies positive responses or identifies the necessity of further studies when no positive response is found.

Thus, review articles, as they are laborious, are a sign of the maturity of a scientific community.

In Table 1 we summarize 30 years of publications in which one can observe the evolution of the production of review articles by Brazilian authors.

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Table 1 - Evolution of Brazilian scientific production: publication of original articles/review articles from 1980 to 2010[3]

| Year | Total | Original articles | | Review articles | |
|---|---|---|---|---|---|
| | | n | (%) | n | (%) |
| 1980 | 1616 | 1608 | 99.50 | 8 | 0.50 |
| 1985 | 2342 | 2315 | 98.85 | 27 | 1.15 |
| 1990 | 3362 | 3269 | 97.23 | 32 | 0.95 |
| 1995 | 6079 | 5315 | 87.43 | 75 | 1.23 |
| 2000 | 12434 | 10862 | 87.35 | 196 | 1.57 |
| 2005 | 19265 | 16951 | 87.98 | 410 | 2.12 |
| 2010 | 34634 | 31180 | 90.02 | 1209 | 3.49 |

The positive trend of increased production of review articles in Brazil is obvious with a total of 3.49% in 2010[3]. However in spite of the undeniable advance in the quantitative production of the country - without comparison to the Asian countries in particular China - even compared to consolidated nations, our qualitative production leaves much to be desired, and negative aspects persist in relation to numbers of citations and the impact factor of Brazil which is only 3.03 (132,301 articles for 400,692 citations of Brazilian works). Another fact is the restricted international collaboration of Brazil: we have produced fewer collaborative studies compared to our neighbors, such as Chile, Argentina and Colombia who have a very much lower total number of publications compared to us.

In conclusion, it is clear that we, as a country, are improving, as the RBHH has improved, but the percentage of review articles submitted to the journal is only around 2.0%. This, considering the source article of this editorial[3] and considering the world scene, shows us that we still have a long way to go and that systematic reviews and guidelines will be a good starting point on our journey of maturation.

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