

Perspectives and Evolution of Research in Cardiology and Cardiovascular Sciences in Latin America

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Publications on cardiovascular research have significantly increased in Brazil and in most of Latin American countries over the past decade. According to the bibliometric study by Colantonio et al.¹ published as a special article in this issue of the Brazilian Archives of Cardiology, this increase occurred at a mean percentage of 12.9% per year from 1999 to 2008¹. In the last five years, the number of publications in Cardiovascular Sciences has significantly increased in the same countries, reaching approximately 1,500 publications in this area of knowledge in 2013, according to data from the main international indexing systems such as Thompson-Reuters' Web of Science and Elsevier's Scopus-Scimago. These figures, however, still account for less than 3% of articles published in international journals indexed in the area of Cardiology and Cardiovascular Sciences.

The bibliometric analysis regarding publications on cardiovascular research in Latin America further demonstrates there is a close association between the Human Development Index (HDI) and the *per capita* Gross Domestic Product (GDP) of the analyzed countries and the total number of studies published during the assessed period¹. This association was significant, with the sole exception of Brazil, which showed a much more significant participation in the number of scientific publications produced in the country than that expected by its level of development¹, accounting for more than 60% of all assessed publications. The growing increase in the number and quality of publications in Cardiology in our country is explained by the better qualification of Brazilian researchers as a result from the training provided by the *Stricto sensu* graduate programs and incentive programs aimed at scientific formation and production sponsored by the Brazilian National Research Council (CNPq) and national medical societies².

In addition to the significant increase in the number of publications in the area of Cardiovascular Sciences, the

changes observed in the profile of these publications and the main topic addressed by them during the last decades are also relevant. In this sense, the work by Évora et al. gives us an excellent view on the evolution of the prevalence of major cardiac conditions, based on publications made by the Brazilian Archives of Cardiology in the 60 years during which the journal was indexed at the international level³. Throughout the analyzed period, we observed the progressive increase in the percentage of publications on coronary artery disease, myocardial infarction, high blood pressure and congestive heart failure - diseases of which prevalence, as well as prevention and treatment actions have become increasingly frequent, with great impact on the population's survival rate increase⁴.

Although Brazilian and Latin American publications usually focus on international journals with impact factors that are frequently high, the study by Colantonio et al.¹ showed, however, that these publications have lower citation rates than those of publications from higher-income countries and higher HDI¹. Regarding the citation indexes assessed in the five years after the publications, the same study observed no significant association between this information and HDI or *per capita* GDP of the assessed countries, contrary to what was observed regarding the total number of published studies.

Despite the constant increase in the number of publications, the different aspects related to scientific production in Cardiology and Cardiovascular Sciences originating from Latin American countries clearly demonstrate that we still have a long way to go to achieve relevant levels of impact at international level in this area of knowledge. This situation is further complicated by the existence of great cultural and economic differences between the countries that comprise the continent and the lack of effective government policies to encourage high-quality scientific production in these countries.

In this sense, in addition to the increase in government and private subsidies to be applied to scientific research, the implementation of training programs in clinical and laboratory research, as well as increase in formation at the level of *Stricto sensu* post-graduate courses are essential for adequate scientific development. At the same time, the implementation of clinical trials and multicenter and multinational registries on the main cardiovascular diseases must be supported to increase the relevance and impact of the obtained data, as well as adequate knowledge of national realities.

Keywords

Cardiovascular diseases; Periodicals as Topic; Latin America, Bibliometrics

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References

1. Colantonio LD, Baldrige AS, Huffman MD, Bloomfield GS, Prabhakaran D. Publicações de pesquisas cardiovasculares da América Latina entre 1999 e 2008. Um estudo bibliométrico. *Arq Bras Cardiol.* 2015; 104(1):5-15.
2. Moreira LF. Impacto da produção científica nacional em cardiologia na qualificação dos periódicos publicados no Brasil. *Arq Bras Cardiol.* 2013; 101(4):286-7.
3. Evora PR, Nather JC, Rodrigues AJ. Prevalência das doenças cardíacas ilustrada em 60 anos dos Arquivos Brasileiros de Cardiologia. *Arq Bras Cardiol.* 2014;102(1):3-9.
4. Gaii EM, Oliveira GMM, Klein CH. Mortalidade por insuficiência cardíaca e doença isquêmica do coração no Brasil de 1996 a 2011. *Arq Bras Cardiol.* 2014;102(6): 557-65.