



Original Article

Dominance of foreign citations in Brazilian orthopedics journals^{☆,☆☆}



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ARTICLE INFO

Article history:

Received 4 January 2014

Accepted 21 January 2014

Available online 27 October 2014

Keywords:

Journal article

Impact factor

Bibliography as subject

ABSTRACT

Objective: To evaluate whether there is any preference for citing journals from other countries to the detriment of Brazilian journals, in three Brazilian orthopedics journals.

Methods: All the references of articles published in 2011 by the journals *Acta Ortopédica Brasileira*, *Coluna/Columna* and *Revista Brasileira de Ortopedia* were evaluated to ascertain how many of these came from Brazilian journals and how many from foreign journals.

Results: 3813 references distributed among 187 articles were analyzed. Out of this total, 306 (8.02%) were from Brazilian journals. There was no difference between the three journals analyzed. There were 76 articles (40.64%) without any citations of articles in Brazilian journals and only two articles (1%) cited more Brazilian articles than articles published elsewhere.

Conclusion: There is a need for Brazilian researchers to cite articles from Brazilian journals more often.

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Domínio de citações estrangeiras nos periódicos brasileiros de ortopedia

RESUMO

Objetivo: Avaliar se há preferência pela citação de periódicos internacionais em detrimento dos nacionais em três revistas nacionais de ortopedia.

Métodos: Foram avaliadas todas as referências dos artigos publicados em 2011 pelas revistas *Acta Ortopédica Brasileira*, *Coluna/Columna* e *Revista Brasileira de Ortopedia*, para verificar a quantidade de artigos provenientes de revistas nacionais e internacionais.

Palavras-chave:

Artigo de revista

Fator de impacto

Bibliografia como assunto

[☆] Please cite this article as: Teixeira RKC, Yamaki VN, Rosa RCR, de Barros RSM, Botelho NM. Domínio de citações estrangeiras nos periódicos brasileiros de ortopedia. *Rev Bras Ortop.* 2014;49:668-670.

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<http://dx.doi.org/10.1016/j.rboe.2014.01.015>

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Resultados: Foram analisadas 3.813 referências dispostas em 187 artigos. Desse total, 306 (8,02%) eram de periódicos nacionais. Não houve diferença entre as três revistas analisadas, 76 (40,64%) dos artigos não citaram artigo de periódico nacional e dois (1%) dos artigos citaram mais artigos nacionais do que internacionais.

Conclusão: Há necessidade de o pesquisador nacional citar mais os artigos provenientes de periódicos nacionais.

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Introduction

Scientific publication can be summarized as the act of bringing certain knowledge based on established scientific methodology into the public domain. Despite the simplicity of the concept, the importance of published papers needs to be highlighted, which has become refined with the advent of electronic publishing. The importance of published papers lies in the fact that from them, new knowledge and operative techniques are described.¹

Brazil occupies a prominent position within worldwide publishing, with the 20th highest number of articles produced² and 12th place in the field of medicine.³ Not only the quantity but also the quality of Brazilian articles can be demonstrated by the large number of Brazilian periodicals identified with more than 100 citations.⁴

However, even with the great growth in production of scientific articles, Brazilian periodicals have not kept up with this evolution and are much below the level of international periodicals.⁵ Journals are evaluated by means of their impact factor, which is based on the number of citations of published articles, over a 2-year period, divided by the number of articles published over this same period.⁶

Thus, one of the factors that limit the growth of periodicals in Brazil is the low level of citation of articles published in Brazilian journals. Pinto and Andrade⁷ stated that Brazilian researchers prefer to cite articles in journals from other countries, even if these do not have an impact factor and do not have high value.

Within the field of orthopedics, Figueiredo⁸ studied the reference lists in the Revista Brasileira de Ortopedia over a 36-year period (1966–2001) and found that out of the 8465 citations, only 470 (5.55%) came from Brazilian periodicals.

With the aim of ascertaining the current situation regarding citations of Brazilian journals within orthopedics, the objective of this study was to assess whether there is any preference of citing journals from other countries, to the detriment of Brazilian citations, in three Brazilian journals of orthopedics.

Methods

This study was characterized as observational and cross-sectional. The reference lists of three Brazilian journals in the field of orthopedics (Acta Ortopédica Brasileira,

Coluna/Columna and Revista Brasileira de Ortopedia) were analyzed.

In these journals, the reference lists of all the articles published in 2011 were analyzed. All the articles defined as original were included. Articles classified as editorials, reviews of the literature or case reports, articles without references and those in which more than 75% of the references were not scientific articles were excluded. Articles that fulfilled the inclusion and exclusion criteria were analyzed based on the references used.⁹

The study protocol assessed the total number of references used. References relating to books, Internet pages or citations of citations (“apud”) were ignored. The numbers of references coming from Brazilian journals and from journals in other countries were ascertained, along with the ratio between articles in Brazilian journals and articles in journals from other countries.

The ANOVA test was used to ascertain whether there were any differences between the journals. The nullity hypothesis was rejected when $p < 0.05$.

Results

In these three journals, 3813 references distributed among 187 articles were analyzed, with a mean of 20.39 ± 8.39 citations per article. Of these, 306 (8.02%) related to Brazilian journals and corresponded to an average of 1.63 ± 2.35 citations per article.

In Acta Ortopédica Brasileira, 53 articles presenting 996 references were studied. Of these, 91 (9.13%) related to Brazilian journals. In Coluna/Columna, 1241 references in 59 articles were identified, of which 74 (5.96%) came from Brazilian journals. In Revista Brasileira de Ortopedia, there were 75 articles presenting 1576 references, among which 141 (8.94%) were citations of Brazilian journals. There was no statistical difference between the three journals analyzed ($p = 0.55$).

Analysis on the ratio between citations in Brazilian journals and in journals from other countries showed that 76 (40.64%) of the articles studied did not cite any article published in Brazilian journals and only two articles (1%) used articles in Brazilian journals more than those in journals from other countries.

Discussion

Even with the exponential growth of Brazilian scientific production, Brazilian periodicals have been able to present the

same performance and they still present low impact factors. There are several reasons for this. Goffi¹⁰ raised the hypothesis that there are few Brazilian journals indexed in international databases, which makes it more difficult to search for native production.

Pinto and Andrade⁷ took into account other factors responsible for this low valuation, such as the paucity of journal subscriptions among institutions or Brazilian authors' preference for journals in other countries, even if these do not have an impact factor and even if the journals do not have great value. Guimarães² stated that the preference for citing foreign articles should only be accepted in studies in which the subject is entirely new and there is a scarcity of Brazilian contributions.

In the present study, it was found that in these orthopedics journals, each article cited a mean of 11.46 foreign articles for each article in a Brazilian journal, which makes it difficult for Brazilian scientific journals to move toward reaching the impact factor levels of the international journals. If Brazilian researchers themselves do not cite Brazilian journals, why should foreign researchers do so?

The low citation levels of Brazilian periodicals can also be understood through the fact that the postgraduate programs of the Brazilian public universities, particularly those of *stricto sensu* type, which are the ones mainly responsible for Brazilian publication,¹¹ evaluated the Qualis of the periodicals in which their articles are published. This leads to exportation of the best studies developed, to foreign journals with higher Qualis values.⁶

This "flight" of the best national results leads to losses for the country, given that a large proportion of these articles are funded by Brazilian national agencies for research stimulation (Capes, CNPq and FAPs). This results in benefits only for foreign periodicals and leaves the local periodicals only with the "leftovers",^{3,9,10} as well as making it difficult for researchers and physicians to have access to the best research.¹¹

The results from this study showed that 8.02% of the citations in the main Brazilian orthopedics journals related to Brazilian periodicals. This is a significant increase in relation to the study by Figueiredo, in which this rate was 5.55%, and represents an important gain for Brazilian research and particularly for Brazilian orthopedics journals, which certainly should have higher value.

This study did not have the aim of stimulating scientific xenophobia. On the other hand, although it is common sense that valuable scientific data published outside of Brazil should

be cited,⁹ the fact that more than 40% of the articles studied did not cite any Brazilian article represents devaluation of Brazilian production.

Conclusion

There is a preference for citing references from journals in other countries in the Brazilian periodicals studied here. This indicates that there is a need to encourage researchers to cite Brazilian articles and thus improve the quality of the scientific journals within orthopedics.

Conflicts of interest

The authors declare no conflicts of interest.

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