



ORIGINAL ARTICLE

“Are We Prophets Only at Home”? Do National Otorhinolaryngologists Cite Papers by Other Spanish ORL Colleagues? ☆

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Abstract

Introduction: Over the last few years, the *Acta Otorrinolaringológica Española* (*Acta ORL*) has been working to improve its impact factor. A high citation rate in the Journals indexed at the Institute for Scientific Information (ISI) is needed to achieve this, particularly in the ones with a high impact factor. The objective of this study was to analyse the index of citation by other national research groups of the articles by Spanish otorhinolaryngologists published in the *Acta ORL Esp*.

Material and methods: Retrospective descriptive-bibliometric study to analyse the publications and citations of original articles published in the *Acta ORL* between January 2004 and December 2008.

Results: We observed that Spanish otolaryngologists had a low publication index in the *Acta ORL*, where only 39.1% of the Spanish biomedical production was published. Moreover, the original articles published in the *Acta ORL* had a low index (32%) of citation by other national authors or groups, displaying a strong self-citation tendency (18.9%).

Conclusion: National otorhinolaryngologists or ORL research groups had a low tendency to cite other national (ORL) authors in their publications. In addition, national authors had low biomedical production compared with their European peers. The biomedical production and the articles published in the *Acta ORL* had a low citation index by ISI indexed journals.

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«¿Solo se es profeta en su tierra?» ¿Citan los otorrinolaringólogos nacionales a otros otorrinolaringólogos españoles?

Resumen

Introducción y objetivos: En los últimos años la revista *Acta Otorrinolaringológica Española* (Acta ORL) ha hecho un gran esfuerzo de difusión científica y mejoría de su calidad con la intención primordial de conseguir el factor de impacto otorgado por el *Institute for Scientific Information* (ISI). Para ello, resulta imprescindible que se incremente el número de veces que sus artículos son citados en otras revistas médicas indexadas en el ISI. El presente estudio analiza la citación de los artículos publicados por los otorrinolaringólogos nacionales en el Acta ORL (Abreviación: Acta Otorrinolaringol Esp), por parte de otros grupos nacionales.

Material y métodos: Estudio retrospectivo descriptivo-bibliométrico, que analiza las publicaciones y las citaciones de los artículos publicados en el Acta ORL por los otorrinolaringólogos nacionales entre enero de 2004 y diciembre de 2008.

Resultados: Se observa un bajo índice de publicación biomédica por parte de los grupos otorrinolaringológicos nacionales en el Acta ORL, donde solo se publica un 39,1% de la producción biomédica nacional. Se observa un bajo índice de citaciones provenientes de grupos nacionales (32%) y una importante tendencia a las autocitaciones (18,9%).

Conclusión: Los autores nacionales citan escasamente a otros autores nacionales en sus propias publicaciones nacionales e internacionales. También observamos un bajo índice de producción biomédica en comparación con los pares europeos. Además, se constata que los artículos publicados en el Acta ORL poseen un bajo índice de citación en revistas indexadas en el ISI.

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Introduction

According to the most recent bibliometric map for Spain (1994–2002) published in *Biomedicina y Ciencias de la Salud*, Spain's production of biomedical literature has multiplied by a factor of four in the last 21 years.¹ At the same time, the *Acta Otorrinolaringológica Española* (*Acta ORL*) journal has made great efforts to increase its circulation and improve its scientific quality in order to increase biomedical production and so be able to obtain an impact factor awarded by the *Institute for Scientific Information* (ISI). Despite these efforts, the latest revision by the ISI has confirmed its refusal to award this factor. The main reason for this refusal has been the low citation index achieved by its articles.

Analysing this situation, a number of different possibilities come to mind. On the one hand, the ISI's initial resolution might suggest that otorhinolaryngologists publish little, generally speaking. If that were so, a low publication index would give rise to a low number of citations. Another possibility would be that otorhinolaryngologists do not publish little but, as suggested by the ISI, their publications (generally grouped according to national boundaries) have had scant scientific repercussion and were cited infrequently at both national and international level. Finally, it would be logical to think that the largest number of citations of articles published in the *Acta ORL* would come from national groups, as these are the one with the easiest access to the journal. If that is so, and in view of the evidence of a low citation index referred to above, it might be thought that the competition between professionals from national centres might be a negative constraint on the dissemination of their colleagues' results.

The goal of our study has been to analyse whether the articles published by Spanish otorhinolaryngologists in the

Acta ORL were cited in other national and international journals, and to assess to what extent these citations came from Spanish authors or groups of Spanish ear, nose and throat specialists.

Material and Methods

A descriptive, retrospective bibliometric study was carried out by analysing the publications made by Spanish otorhinolaryngologists or Spanish groups of ENT specialists in the journals indexed. The study period established was from January, 2004, until December, 2008. Out of the total publications made by national groups in the journals indexed, we subsequently analysed the citations received by articles published in *Acta ORL*.

For this analysis, all original works on clinical and basic research were included, as were case reports, but reviews, letter to the editor and supplements were excluded. A search query was run on *SciVerse-Scopus* (Scopus)² using the key words "Otolaryngology" and "ENT" for the subject area and "Spain" in the affiliation field. The results obtained from this search were then filtered according to the inclusion criteria defined above for the time period established, in order to obtain a list of those works belonging to national groups in this speciality. Starting from these initial data, all articles published in *Acta ORL* and meeting the inclusion criteria for the study period defined were selected. For the bibliometric analysis of the articles published in *Acta ORL*, a search query was conducted and the citations of each article analysed, considering that an article cannot be cited within the first 12 months following its publication, which limited the search for citations until November, 2011 (the last update of Scopus available at the time of the study).

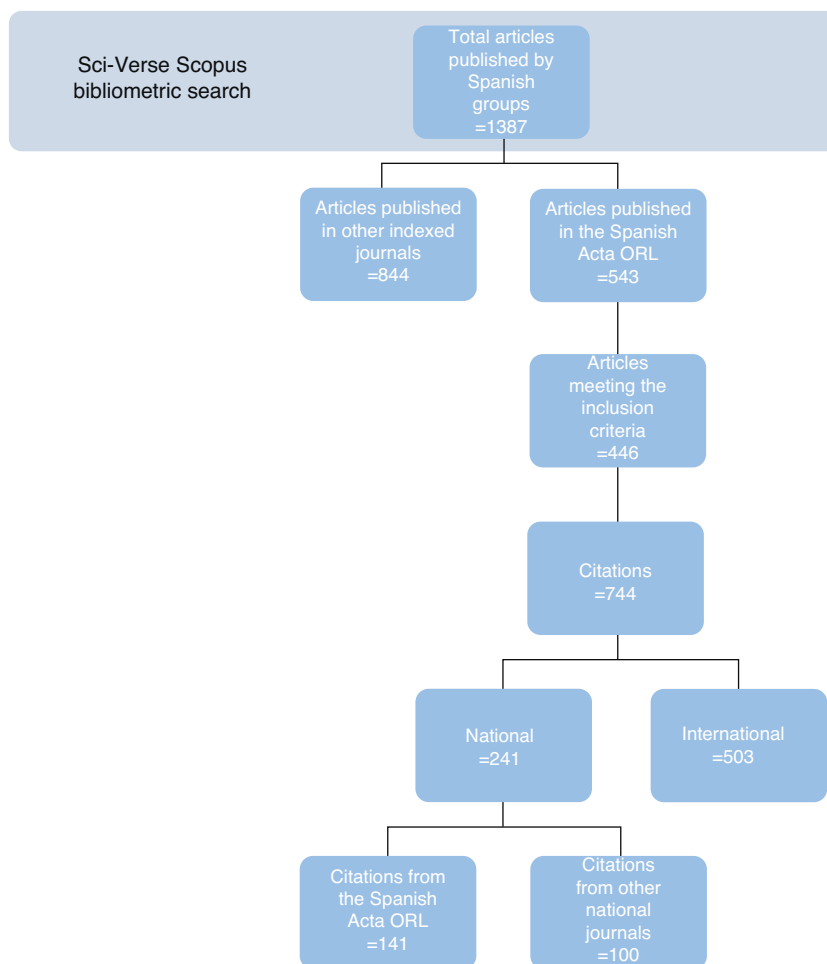


Figure 1 Results of the Sci-Verse Scopus bibliometric search.

Variables Analysed

For the articles selected from *Acta ORL*, the number of articles published per year was calculated, together with the number of citations obtained by such articles, the number of references used in those articles, the ratio of self-citations by the authors (percentage of self-citations by authors with respect to the total number of citations obtained) and the ratio of same-journal citations (percentage of citations from articles published in *Acta ORL* with respect to the total number of citations obtained). Self-citation by authors was deemed to be citing any work in which the person concerned was the lead author or any of the co-authors.

The distribution of the citations was analysed according to linguistic criteria: Spanish speakers from Spain, Spanish speakers from elsewhere and non-Spanish speakers. In order to assess the repercussion of the translation into English of the articles in *Acta ORL* since 2004, an analysis was also made of the linguistic distribution of the citations of articles published between January, 2000, and December, 2003. The co-authorship ratios (between the number of authors and the number of articles) were calculated for the number of articles published per year, as were the *h* index (maximum number of articles published, whether by a scientist or a journal, with at least the same number of citations) and the

reference rate per article (the ratio between the number of references made and the number of articles published). The impact factor of the articles studied (the ratio between the number of citations received in a given year and the documents published in a journal in the 2 preceding years) was also analysed for the years under study, as well as the impact factor for *Acta ORL* published by *Scimago Journal Rank* for the years studied.

Results

The bibliometric search on Scopus for the period under study is shown in Fig. 1. The total obtained was 1387 publications produced by groups of ENT specialists from Spain, of which 543 (39.1%) were published in *Acta ORL*. The distribution by years and by article type is shown in Table 1. The 446 articles meeting the inclusion criteria generated 744 citations, with a mean of 1.71 ± 0.6 citations (range: 0.8–2.1) per article. The percentage mean of self-citations by authors in *Acta ORL* was 10.7% (range: 3.8%–15.8%). The mean ratio of self-citations in *Acta ORL* for the period studied was 18.31%.

Table 2 shows the breakdown for each year of the ratios of authors by article, the citations of these articles, the self-citations by national authors in *Acta ORL* and the

Table 1 Annual Distribution of the Articles Published by Spanish ENT Groups.

	No. of Art.	No. of Art. in <i>Acta ORL</i>	No. of Orig. in <i>Acta ORL</i>	No. of Rev. in <i>Acta ORL</i>	No. of Edit. in <i>Acta ORL</i>	Letters in <i>Acta ORL</i>	Suppl. in <i>Acta ORL</i>	Others in <i>Acta ORL</i>
2004	207	90	81	7	2	0	0	0
2005	242	97	83	8	1	4	0	1
2006	282	97	84	9	2	0	0	2
2007	311	136	99	20	6	4	6	1
2008	345	123	99	15	3	3	0	3
Total	1387	543	446	59	14	11	6	7

Letters in *Acta ORL*: number of letters to the editor published in *Acta ORL*; No. of Art.: number of articles published by national groups in indexed journals in *Sci-Verse Scopus*; No. of Art. in *Acta ORL*: number of articles published by Spanish groups in *Acta ORL*; No. of Edit. in *Acta ORL*: number of editorials published in *Acta ORL*; No. of Orig. in *Acta ORL*: number of original articles published in *Acta ORL*; No. of Rev. in *Acta ORL*: number of reviews published in *Acta ORL*; Others in *Acta ORL*: the sum of lectures and errata published in *Acta ORL*; Suppl. *Acta ORL*: number of supplements published in *Acta ORL*.

Table 2 Ratios of Self-Citations and Citations Per Article Published in *Acta ORL*.

Year	Co-Authorship Ratio, SD	Citations	Self-Citations, %	Citations/Article
2004	5.3 (± 1.7)	171	15.8	2.1
2005	4.9 (± 1.7)	181	11.6	2.2
2006	4.9 ($\pm .6$)	156	13.5	1.9
2007	4.8 ($\pm .7$)	158	8.9	1.5
2008	5.5 ($\pm .8$)	78	3.8	0.8
Total	5.1 ($\pm .7$)	744	10.7	1.7

Self-citations (%): percentage of self-citations by authors who published articles in *Acta ORL*; Citations: citations obtained by original articles in *Acta ORL*; Citations/article: ratio between the number of citations obtained by articles published in *Acta ORL* and the number of articles published that year; SD: standard deviation; Co-authorship ratio: ratio between the number of article authors and the articles published in *Acta ORL*.

relationship between the citations obtained and the articles published in *Acta ORL*.

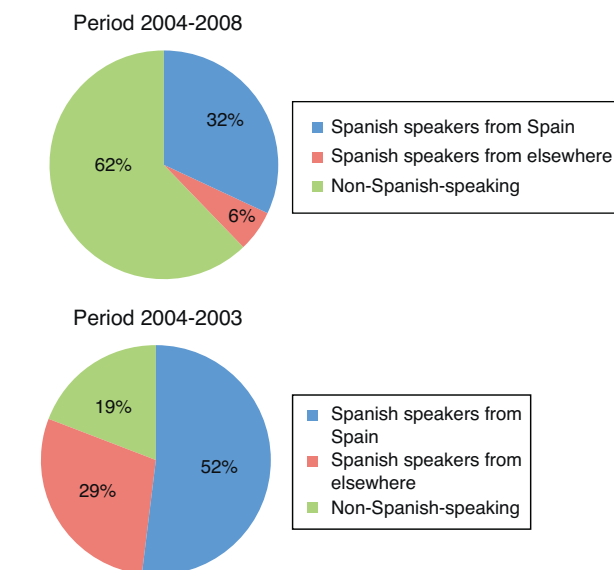
The percentage of citations of *Acta ORL* from non-Spanish-speaking groups for the period 2004–2008 was 62% and 19% for the period 2000–2003. The language distribution of the citations obtained by articles in *Acta ORL* according to the periods 2000–2003 and 2004–2008 is shown in Fig. 2.

The co-authorship rate was 5.1 (SD: ± 1.7 ; range: 1–10) signatures per paper. The mean *h* index during the period under study for *Acta ORL* was 5.8 (SD: ± 2 ; range: 4–7). The rate of references per article was 19.8 (SD: ± 10.2 ; range: 4–105) for each article published. The impact factor of the articles in *Acta ORL* studied for the period under study was 1.7 and the mean impact factor by year of the articles in *Acta ORL* studied was 0.7 (0.5–0.9). The mean impact factor of all the articles published in *Acta ORL* in the years studied was 0.29.

The annual distribution of the various ratios is given in Table 3.

Discussion

The results of this study show that, during the period analysed, approximately 40% of the biomedical production of Spanish otorhinolaryngological groups was published in *Acta ORL*. These findings contrast with the results obtained by López-Escámez,³ who found that the biomedical scientific

**Figure 2** Language distribution of the citations obtained by the selected articles in *Acta ORL*.

production published in *Acta ORL* by Spanish ENT departments was close to 60% in the period 1998–2002.

The variation in these data may be interpreted in different ways. On the one hand, it might be assumed that the quality of ENT biomedical production has substantially

Table 3 Annual Distribution of the Different Ratios.

Year	Articles	References/Article rate	Impact Factor Art. Studied	Impact Factor	<i>h</i> Index	<i>Acta ORL</i> Self-Citation Rate, %
2004	81	17.90	0.83	0.21	7	22.81
2005	83	17.61	0.95	0.26	7	17.68
2006	84	17.00	0.67	0.26	5	21.15
2007	99	18.92	0.71	0.35	6	17.09
2008	99	14.89	0.45	0.35	4	12.82
Mean	446	17.26	0.72	0.29	5.8	18.31

Impact factor: ratio between the number of citations obtained in a given year for documents published in a journal in the 2 previous years and the number of documents published by the journal in those 2 years; Impact factor art. studied: ratio between the number of citations obtained in a given year by articles meeting the inclusion criteria published in *Acta ORL* in the 2 preceding years and the number of articles meeting the inclusion criteria published in *Acta ORL* in those 2 years; *h* index: maximum number of articles published, whether by a scientist or a journal, with at least the same number of citations; *Acta ORL* self-citation rate: percentage of citations from articles published in *Acta ORL* with respect to the total number of citations obtained; References/article rate: ratio between the number of references given and the number of articles published.

improved, with an increase in the number of publications in journals with a higher impact within the field of otorhinolaryngology. This would mean accepting, to some extent, that Spanish groups prefer to publish in journals with an impact factor recognized by the ISI, to the detriment of *Acta ORL*, which does not yet have such an impact factor, as publishing in journals with an impact factor gives authors greater scientific status and an improved curriculum. It should be mentioned that this study has only analysed articles by Spanish authors or groups published in ENT journals. In view of the above, we have to highlight the bias arising from ignoring articles published in journals for other biomedical areas.

On the other hand, it has been said that, when publishing in English, authors tend instinctively to use articles written in that language,⁴ and this might lead to *Acta ORL* being somewhat overlooked (as historically it has been published in Spanish). In an editorial in *Archives of Medical Research*,⁴ Benítez Bibriesca pointed out that a paper published in Spanish will be 50% less cited than a paper of the same quality published in English. Since 2004, all the articles in *Acta ORL* are available in English translation in the *on-line* edition and this financial effort has been an important key to the increase in citations of articles in *Acta ORL* by papers published by non-Spanish-speaking authors, as shown by the 43% increase between the periods 2000–2003 and 2004–2008.

Considering that a journal is valued not for the quantity of articles published but rather for the number of times its articles are cited,⁵ the 446 articles published in *Acta ORL* between 2004 and 2008 have generated only 744 citations (1.7 times the articles published). The otorhinolaryngological journals indexed by the ISI have a mean of 1136 citations (11.9 times the articles published), generated by an average of 95 articles published. There is, therefore, an enormously disproportionate balance between the citations obtained by articles in ISI-indexed journals compared to those in *Acta ORL*. The proportion of citations to articles in ENT journals indexed by the ISI is approximately 7 times higher than for *Acta ORL*.⁶ In view of this situation, it might be thought that these journals obtain such high indices by having a large number of self-citations, but the results show just the opposite: *Acta ORL* presents a mean self-citation index that doubles the mean number of self-citations in

ISI-indexed ENT journals (18.9% versus 8.4%).^{2–6} This high rate of self-citations in *Acta ORL* shows that, generally speaking, national groups tend to cite their own work published in *Acta ORL*. However, the jury is still out on whether these Spanish groups also cite papers published in *Acta ORL* when publishing in ISI-indexed journals.

It is of interest to note the results obtained regarding citations in terms of their language distribution. Despite the limitations inherent to Castilian Spanish, most of the citations obtained by *Acta ORL* come from non-Spanish-speaking authors (62%) and only 6% of the citations were by Spanish-speaking authors from outside Spain. This high percentage of citations from non-Spanish-speaking authors might be explained by the fact that most current ENT publications are by non-Spanish-speaking authors. Cimino et al.⁷ analysed the otorhinolaryngological publications from 2006 and showed that 38% of these came from groups in the USA and 36.1% from European groups. Of all the publications produced by European groups, 28.5% corresponded to the United Kingdom; 26.2% to Germany; 7.2% to Italy; 5.8% to Sweden; 5.5% to France; 4.9% to The Netherlands and, finally, 4% to Spain. These percentages confirm, to a certain extent, that scientific production in our country is low.

At the present time, the best way for authors to increase their citations is to publish in English and in North-American or European journals (mainly in the United Kingdom), as these concentrate the largest number of publications on otorhinolaryngology. The selection of bibliographical references in these journals requires an effort, because they tend to be limited in number and preference must be given to those that are most original and/or significant. This rigour in the selection of citations is usually less notable in those journals with no impact factor or with a lower one. Perhaps this might explain the high percentage of self-citation by national groups in articles published in *Acta ORL*, compared to journals with a higher impact factor.

Increasing the citations of any publication requires hard work and perseverance. There can be no doubt that the different strategies used by the *Acta ORL* editorial committee are of great value, particularly the introduction of review articles by well-respected authors on novel subjects or those worthy of greater dissemination, not specifically analysed

in the present study. The translation into English should be considered a key factor for facilitating the journal's dissemination among non-Spanish-speaking authors, since this strategy has been shown to be extraordinarily fruitful in terms of the 43% increase in citations by non-Spanish-speaking authors. Nonetheless, the data from our study show that the specific weighting of the Spanish groups in worldwide biomedical production is open to improvement in the field of ENT.

In order to foster the scientific weight of *Acta ORL* and achieve an impact factor, it seems necessary to stimulate, first of all, interest in research in our country, as well as increase the number of publications by national groups and improve their overall quality. The higher the quality, the more likely will it be that the various papers may be referenced in other publications, both in Spain and abroad. It also seems necessary to raise awareness among all Spanish authors about the need to boost the journal itself (*Acta ORL*) by including in their references, whenever pertinent, well-designed studies produced by Spanish authors and published in this country.

Conclusions

The study carried out has shown that Spanish otorhinolaryngologists publish little in comparison with their European peers. The articles published in *Acta ORL* have a low citation ratio in indexed journals and, in general, when it comes to publishing in *Acta ORL*, almost 40% of these tend

to cite papers published in *Acta ORL*. All this would allow us still to state that "we are prophets only at home".

Conflict of Interest

The authors have no conflict of interests to declare.

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