EDUCATIONAL SCIENCES
ORIGINAL ARTICLE

Revista Habanera de Ciencias Médicas: a vision from Scienciometry

Revista Habanera de Ciencias Médicas: una mirada desde la Cienciometría

Ray Valdés Balbín,[I] Jorge A Fundora-Mirabal,[I] Lissette Cárdenas-de Baños,[I] Daysi Bencomo-Díaz,[I] Cristóbal González-Losada,[I] Josmel Pacheco-Mendoza,[II] Alberto Juan Dorta-Contreras[I]

[I] Universidad de Ciencias Médicas de La Habana. La Habana, Cuba.
[II] Universidad de San Ignacio de Loyola. Lima, Perú.

How to cite this paper:
Valdés Balbín R., Fundora-Mirabal JA., Cárdenas-de Baños L., Bencomo Díaz D., González-Losada C., Pacheco Mendoza J., Dorta Contreras AJ. Revista Habanera de Ciencias Médicas: a vision from Scienciometry. Revista Habanera de Ciencias Médicas [Internet]. [Cited];16(7):[1112-1128]. Available from: http://www.revhabanera.sld.cu/index.php/rhab/article/view/2334

Received: October 13, 2016.
Approved: January 7, 2017.

This paper is a tranlation to English of its original version, available on:
http://www.revhabanera.sld.cu/index.php/rhab/article/view/1775/1586

ABSTRACT

Introduction: Teamwork among editors, director, and the Editorial Board is essential in order to guarantee a satisfactory editorial process. The main purpose of this association is to publish papers with an adequate scientific-methodological rigor, which demands a great effort in order to maintain quality, guarantee scientific validity, and protect potential readers who have access to the final product.

Objective: To characterize the Revista Habanera de Ciencias Médicas from metric indicators.

Material and methods: A scientific and metric study of this bibliographic variables published by Publish or Perish, and metric indicators provided by SciELO and SciELO Citation Index.

Results: The journal has an h-index of 18, with more than a thousand published authors. The average number of authors per article is 3 and there is a favorable balance between the distribution of cited and non-cited articles. It

makes more citations than the ones it receives, and it does not have a high number of self-cites.
Conclusions: The Revista Habanera de C iencias Médicas has shown results that place it among the best positioned journals with health related issues in greater coverage databases, which is demonstrated from the analysis of its metric indicators.

Keywords: scientific production, visibility, Scientometry, bibliometrics, journal, metric indicators, citations.

RESUMEN

Introducción: Para garantizar un adecuado proceso editorial es necesario la asociación de los editores, director y comité editorial, quienes tienen como principal propósito publicar manuscritos con un adecuado rigor científico-metodológico, lo cual supone un gran esfuerzo en aras de mantener la calidad, garantizar la validez científica y proteger a los potenciales lectores del producto final al que tienen acceso.
Objetivo: Caracterizar la Revista Habanera de Ciencias Médicas a partir de indicadores métricos.
Material y Métodos: Se realizó un estudio cienciométrico de esta publicación en el período comprendido desde 2002 hasta 2016. Se evaluaron las variables bibliométricas que brinda Publish or Perish y los indicadores métricos que facilitan SciELO y el SciELO Citation Index.
Resultados: La revista tiene un índice H de 18 con algo más de un millar de autores publicados. El promedio de autores por artículos es de 3 y existe un balance favorable entre la distribución de artículos citables y no citables. Aporta más citas que las que recibe y no posee un alto número de autocitas.
Conclusiones: La Revista Habanera de Ciencias Médicas ha mostrado resultados que la colocan entre las revistas de mejor posicionamiento relacionadas con el tema salud en las bases de datos de mayor cobertura, lo que queda demostrado a partir del análisis de sus indicadores métricos.

Palabras clave: Producción científica, visibilidad, cienciometría, bibliometría, revista, indicadores métricos, citas.

INTRODUCTION

The Revista Habanera de Ciencias Médicas (RHCM) made its first issue visible in January 2002, and over the course of these 15 years, it has been placed as one of the most prestigious publications among the set of Cuban medical full-text journals that are available in the Virtual Health Library (BVS) of the National Medical Sciences Information Center in Cuba (INFOMED). From the very beginning, this electronic journal, which is sponsored by the University of Medical Sciences of Havana (UCMH) included, among its strategic projections, the increase of its visibility. In this sense, and after a hard work carried out by all members of the Editorial Board, it was included in the SciELO collection,[1] a prestigious database of the Ibero-American area, where its volumes appear from 2007 to the present. Later on, other databases accepted it because it complies with different parameters required to

be inserted. Among these databases we can mention: Latindex, EBSCO, Redalyc, Medigraphic, Cite Factor, and Google Scholar. In the year 2003, it was one of the first Cuban journals of the Biomedical Area that adopted its editorial process through the Open Journal System (OJS), which provides a more efficient and unified management of the entire process.

Recently, as a result of a work published[2] that referred to the positioning of scientific journals with health-related issues, according to the h5-index (Hirsch index of the articles published in the last five years), obtained from Google Scholar Metrics in relation to the Cuban medical journals, it was stated that: "… less than 30% of journals have h5-index values above 10, most of them from the Medical Sciences Publishing House (ECIMED), which is evidenced by the fact that only 2 of the 10 first publications (Revista Habanera de Ciencias Médicas, and Medisur) are published outside that institution". Later on, it is also stated that: "Of the journals published in some institutions of Havana, excluding ECIMED, only the Revista Habanerade Ciencias Médicas appears in the top 20". This really demonstrates in practice, the place that the journal occupies in the national scientific scene. However; the association of editors, director, and editorial board is necessary in order to guarantee an adequate editorial process, whose main purpose is to publish manuscripts with an adequate scientific methodological accuracy; which implies a great effort in order to maintain quality, guarantee scientific validity, and protect potential readers who have access to the final product. In this regard, the RHCM established a peer review system and a double blind one, which, in spite of the proven weaknesses, continue being an indispensable element to guarantee the quality of a scientific journal.[3]

OBJECTIVE

To characterize the Revista Habanera de Ciencias Médicas from metric indicators.

MATERIAL AND METHODS

A scienciometric study of the Revista Habanera de Ciencias Médicas was carried out during the period 2002 - 2016.

The following bibliometric variables obtained by Publish or Perish[4], a program that searches and analyzes academic quotations based on Google Scholar, were evaluated.[5] Publish or Perish program takes into account all the articles, not only the ones that are liable for the traditional h-index.

Bibliometric variables:

- Total number of articles.
- Total number of citations.
- Average number of citations per article.
- Average number of citations per author.
- Average number of citations per author yearly.
- Average number of articles per author.
- Average number of authors per articles.
- Hirsch index.
- Zhang index or e-index.
- Egghe index or g-index.
- Contemporary h-index.
- Three variants of individual h-index (hI-index, hI, norm, and hm-index).
- Average annual increase in the individual h-index (hI, annual).
- Proportion of citations according to the

emission time.

The indexes used for this evaluation are mainly based on both productivity and visibility. The former is given by the number of articles, and the latter is attributable to the analysis of citations. From the wide family of indexes that assume Hirsch h-index as a basis, the following ones were considered:

Hirsch h-index is the oldest in this family. It simply consists in ordering an author´s works in a decreasing manner by virtue of the citations received for each work. We have our h-index when the rank (position in the list) exceeds or equals the value of the citation. This means that the author has "h" works with at least "h" citations; that is, an author has an "h" index if he/she has "h" articles which have been cited at least "h" times.[6-13]

e-Index. It is the square root of the sum of citations of the words included in the h-index.[14]

g-Index. It is the one in which the square root of the sum of citations is the largest number in a decreasing order of citations.[15,16,17].

Contemporary index. Contemporary h-index takes into account the time when the article was published and its citations. For example, a citation of an article published in the current year has a value of 4, whereas a citation of an article published 4 years ago has a value of 1, and an article published 6 years ago has a weight of 4/6, and so on. In other words, a weighed citation is later arranged as h-index.[18,19]

h-index for individual research group. There are three variants:[20]

Variant 1 – hi. h-Index is divided by the number of average authors published by the author.

Variant 2. hi, normalized. Each citation per article leading to h-index are selected and divided by the number of authors of the work, and the resulting h-index is calculated.

Variant 3. hi, m, or Schreiber. The article is divided among the authors, the number of full citations is taken into account, and the resulting h-index is calculated.[20]

Annual h-index. This is an index which considers the annual impact. It is measured as an average annual indicator of the impact of the researcher, and it is not cumulative the whole life as it is on h-index.[21]

AR-Index or JIN Index. It is the square root of the sum of all age-weighted citations of all documents that lead to h-index.[22]

AWCR index. It is the age-weighted citation rate of the article. It measures all citations adjusted by the age of each document which includes the traditional h-index. It is an average of the citations in which each document is divided by the number of years of the article, and is measured as the square root of all citations.[22]

AW index. It is the square root of AWCR index to allow a comparison with h-index. It comes closer to h-index if the citation rate (average) remains more or less constant over the years.[22]

On the other hand, the metric information that SciELO[7] provides to all journals that are included in its catalog was analyzed through its tables and figures.

The Journal was selected to integrate the selected group of Cuban publications included in the catalog of SciELO Citation Index[8], which can be accessed in the Web of Science database where the main scientific stream is located.

The position that the journal occupies within its profile was searched in Google Scholar Metrics.[8]

RESULTS

Table 1 shows the values of the main indexes and variables given by Publish or Perish.

The most cited articles that have been published in RHCM can be observed in Table 2, according to the visibility score on Google Scholar.

The analysis of the 100 issues of a journal according to the number of times they are downloaded from this database is found in the metric evaluations that SciELO database has started to develop. This result is shown in Table 3.

Table 1. Indexes and values of metric variables of the *Revista Habanera de Ciencias Médicas* according to Publish or Perish*

Metric Variables	Values
Articles	1000
Citations	2221
Years	14
Citations/year	158,64
Authors with citations	1218,28
Authors with articles	503,07
Authors/articles	2,47
Indexes	**Values**
h-index	18
g-index	23
hc-index	16
hl-index	9,82
hlnorm index	15
AWCR	411,24
AW index	20,28
AWCRpA	216,03
e-index	12,25
Hm-index	15,50
citations/author/year	87,02
annual HL	1,07
Amplitude h	21
Amplitude g	25

Table 2. Most cited works obtained from the search in *Publish or Perish**

Citations	Authors	Títles of thearticles	Year
45	RM Martínez Ortega, LC Tuya Pendás...	Spearman´s Rank Correlation coefficient. Characterization.	2009
38	DP Núñez, L García Bacallao	Biochemistry of dental caries.	2010
34	M Pérez Perdomo	Interventions directed to carers of older adults with Alzheimer´s Disease.	2008
34	MC Amaro Cano	A new paradigm for the new university.	2010
31	F Ortiz Rodríguez, CA Román Collazo	Morphophysiology discipline as an alternative of curricular integration in the teaching of Medicine.	2010
29	R Sardiñas Ponce	Breast self-exam: an important tool for the prevention of breast cancer in Primary Health Care.	2009
26	JA Fernández Sacasas	Controversies around evidence-based Medicine.	2011
25	I Castro Abreu	Knowledge and risk factors about sexually transmitted infections in adolescents.	2010
23	Y Expósito Concepción	Quality of life in primary carers of patients with cancer.	2008
23	EG Cabrera, MG Hidalgo...	Inappropriate use of drugs in Sixth Year Medical Students.	2005
22	JAS Fernández	Towards the improvement and redesign of the current medical curriculum.	2003
22	N Torriente Barzaga, D Diago Caballero...	Elemental knowledge about sexual education in students of an Urban Secondary School.	2010
22	PÁ Peñón Vivas, IB Grau León...	Temporomandibular jointdysfunction syndrome and associated factors. "Miguel Enríquez" Hospital. 2009-2010.	2011
21	DA Aguirre Raya	Job satisfaction of nursing human resources. Affecting factors.	2009
20	A Herrera Galiano, MA Serra Valdés	The diagnostic procedure and its teaching in Medicine.	2011
20	I Domínguez Domínguez	Study of low-birth weight in Cayo Hueso Community?	2010
20	LA Ochoa Montes, M González Lugo...	Atherosclerotic lesion in sudden cardiac death.	2010
19	D Morales Navarro, L Rodríguez Lay...	Importance of the Early Detection Program of oral cancer in Cuba.	2009
18	JAF Sacasas, MP Gómez	The new educative model in Medical Sciences.	2003
17	EA Pérez, MM del Pino, MAG Pérez	Quality standards of Medical Studies.	2009

Search date: September15, 2016*

Table 3. Most consulted volumes of the *Revista Habanera de Ciencias Médicas* through the search in SciELO database

VOLUME	HTML	PDF	ABSTRACT	TOTAL
Vol. 8. Nr.4. 2009	7527	643	41	8211
Vol. 9. Nr. 3. 2010	6861	437	15	7313

Vol. 8. Nr. 2. 2009	6364	472	6	6842
Vol. 7. Nr. 1. 2008	4558	375	12	4945
Vol. 8. Nr. 1. 2009	4196	427	9	4632
Vol. 7. Nr. 3. 2008	4299	148	75	4522
Vol. 8. Nr. 3. 2009	3897	303	13	4213
Vol. 9. Nr. 4. 2010	2903	401	24	3328
Vol. 7. Nr. 4. 2008	2927	344	11	3282
Vol. 8. Nr. 5 (Suppl.). 2009	2953	257	10	3220
Vol. 12. Nr. 1. 2013	2915	296	3	3214
Vol. 9. Nr. 3. 2010	2216	940	20	3176
Vol. 9. Nr. 5 (Suppl.). 2010	2784	196	20	3000
Vol. 10. Nr. 3. 2011	2523	311	1	2835
Vol. 10. Nr. 1. 2011	2271	364	20	2655
Vol. 12. Nr. 4. 2013	2242	202	10	2454
Vol. 10. Nr. 4. 2011	2123	235	8	2366
Vol. 12. Nr. 3. 2013	2098	189	6	2293
Vol. 6. Nr. 3. 2007	1972	117	12	2101
Vol. 11. Nr. 1. 2012	1776	259	12	2047

Table 4 presents the most cited works according to the metrics of SciELO Citation Index, and Table 5 shows a comparison between Scielo Citation Index and Publish or Perish regarding the citations reported for RHCM in each database.

Table 4. Most cited articles according to the *SciELO Citation Index* database*

Authors	Title	Citations	Year
Herrera Galiano, Ana; Serra Valdés, Miguel A.	The diagnostic process and its teaching in Medicine	7	2011
Fernández Sacasas, José A.	Controversies around evidence-based Medicine.	6	2011
Torriente Barzaga, Norberto; Diago Caballero, Dalis; Cristina Rizo Vázquez, Anaysa; Menéndez López, Lucía Raisa.	Elemental knowledge about sexual education in students of an Urban Secondary School.	5	2010

Blanco Aspiazu, Miguel Ángel; Rodríguez Collar, Tomás Lázaro; Morales González, Héctor Andrés.	Some applications of the law of dialectics to the teaching of the clinical practice	4	2011
Dorta Contreras, Alberto Juan; Hernández Ferreras, Kiria; Cárdenas de Baños, Lissette.	Quality of science in the University of Medical Sciences of Havana: new model and challenges.	4	2011
Domínguez Domínguez, Inés.	Study of low-birth weight in Cayo Hueso Community?	4	2010
Ochoa Montes, Luis Alberto; González Lugo, Mileidys; Tamayo Vicente, Nidia D; Romero del Sol, Juana M; Correa Azahares, Dennis P; Miguélez Nodarse, Ramón; Fernández-Britto Rodríguez, José E.	Atherosclerotic lesion in sudden cardiac death.	4	2010
Legón, Maritza de la Rosa; Vega González, Nelia; Brito Gómez, Lourdes	The social medical paradigm and communicative competence in the professional of the Medical Sciences	4	2010
Mayán Reina, Grissel; de Beche Riambau, Elisa; Sosa Rodríguez, Iria; Parejo Maden, Dayanira; Morales Morán, Liset	Chronic gingivitis and oral hygiene in adolescents of "Raúl González Diego". Secondary School.	3	2012
Soler Morejón, Caridad.	Medical knowledge and its management	3	2011
Castro Abreu, Idania.	Knowledge and risk factors about sexually transmitted infections in adolescents	3	2010
Díaz-Perera, Georgia; Concepción Quero, Fidel; Quintana Setién, Carlos; Alemañy Pérez, Eduardo	Risk factors and consequent atherosclerotic diseases in diabetic patients.	3	2010
Díaz-Perera Fernández, Georgia; Vicedo Tomey, Agustín G; Sierra Figueredo, Simón; Pernas Gómez, Marta; Miralles Aguilera, Eva; Blanco Aspiazu, Miguel Ángel; Damiani Cavero, Julieta Sonia; Taureaux Díaz, Niurka; Díaz Novás, José; Gálvez Gómez, Leticia; Molina López, Javier A; Curbelo Serrano, Vladimir.	Effectiveness of the medical curriculum. Design and validation of instruments to evaluate the function of research.	2	2014
Bertrán Herrero, Grethell; Rosales Alonso, José Luis	Dental pulp and periapical lesions in the Odontological Urgency Service. "Felipe Soto" Clinic. 2010-2011.	2	2014
La Rosa Hernández, Deyanira; García Bacallao, Elsa; Vega-Sánchez, Héctor; Lazo-del Vallín, Sacha; a Elvires Gutiérrez, Ángela; Escobar Capote, María Del Pilar. Sánchez-Castañeda, Niurka; Montesinos Goicolea, Soamy; León Toirac, Emigdio; Gómez Cabeza, Enrique	Immune status in children with chronic nonspecific diarrhea.	2	2013

Acosta Alegría, Magaly; Morales Gómez, Amelia; Gutiérrez Pérez, María de los Ángeles; Piñera Díaz, Alejandrina.	HIV/AIDS Epidemic. Its behavior in "Habana Vieja" Municipality during the periods 1997- 2002 and 2003-2008.	2	2012
Castro Abreu, Idania; Rizo Montero, Yelena; Reyes Pelier, Yudisai; Vázquez Adán, Manis.	Educative intervention about sexually transmitted infections in adolescents of "Fructuoso Rodríguez" Secondary School.	2	2012
Hernández Fernández, Rolando A.	Kinase and phosphatase: The yin and yan of life.	2	2012
Tamayo Pérez, Vilma Inés; Esquivel Lauzurique, Mercedes; González Fernández, Ciro.	Recurrent respiratory infections and nutritional status in children from 0 to 6 years of age.	2	2012
Traviesas Herrera, Eladio Miguel; Rodríguez Ortega, Judy; Bordón Barrios, Daynin; Guerra Sevilla, Maria Elena; Martínez Abreu, Judit.	Periodontal condition in relation to the practice of smoking. Boquerón Monagas, Venezuela 2009.	2	2012

*Cited: 2016 October 25.

Table 5. Comparison of reported citations between *Scielo Citation Index* (SCI) and *Publish or Perish* (PoP)

Authors	Articles	SCI	PoP
Miguel A. Serra Valdés, Ana Herrera Galiano.	The diagnostic process and its teaching in Medicine	7	20
José A. Fernández Sacasas.	Controversies around evidence-based Medicine.	6	26
Norberto Torriente Barzaga; Dalis Diago Caballero; Anaysa Cristina Rizo Vázquez. Raiza Menéndez López.	Elemental knowledge about sexual education in students of an Urban Secondary School.	5	22
Alberto Juan Dorta Contreras; Kiria Hernández Ferreras; Lissette Cárdenas de Baños.	Quality of science in the University of Medical Sciences of Havana: new model and challenges.	4	15
Inés Domínguez Domínguez.	Study of low-birth weight in Cayo Hueso Community?	4	20
Luis Alberto Ochoa Montes; Mileidys González Lugo; Nidia D Tamayo Vicente; Juana M Romero del Sol; Dennis P Correa Azahares; Ramón Miguélez Nodarse; José E Fernández-Britto Rodríquez.	Atherosclerotic lesion in sudden cardiac death.	4	20
Idania Castro Abreu.	Knowledge and risk factors about sexually transmitted infections in adolescents	3	25
Daniel Pedro Núñez; Lourdes García Bacallao.	Biochemistry of dental caries	2	38

Blanco Gámez, Dayris; Arrieta Zulueta, Mercedes.	Pregnancy and adolescence: Clinical and epidemiological behavior in "Parraga" Polyclinic. Arroyo Naranjo. 2005-2006.	1	14
Ortiz Rodríguez, Felino; Román Collazo, Carlos A	Morphophysiology discipline as an alternative of curricular integration in the teaching of Medicine.	1	31
RM Martínez Ortega, LC Tuya Pendás.	Spearman´s Rank Correlation coefficient. Characterization	0	45
M Pérez Perdomo.	Interventions directed to carers of older adults with Alzheimer´s Disease	0	34
MC Amaro Cano.	A new paradigm for the New University	0	34
R Sardiñas Ponce.	Breast self-exam: an important tool for the prevention of breast cancer in Primary Health Care.	0	29
Y Expósito Concepción.	Quality of life in primary carers of patients with cancer.	0	23
EG Cabrera, MG Hidalgo...	Inappropriate use of drugs in Sixth Year Medical Students.	0	23
JAS Fernández.	Towards the improvement and redesign of the current medical curriculum.	0	22
Peñón Vivas, Pedro Ángel; Grau León, Ileana B; Sarracent Pérez, Humberto.	Temporomandibular joint dysfunction syndrome and associated factors. "Miguel Enríquez" Hospital. 2009-2010.	0	22
DA Aguirre Raya.	Job satisfaction of nursing human resources. Affecting factors.	0	21
D Morales Navarro, L Rodríguez Lay.	Importance of the Early Detection Program of oral cancer in Cuba.	0	19
JAF Sacasas, MP Gómez.	The new educative model in Medical Sciences	0	18
EA Pérez, MM del Pino, MAG Pérez.	Quality standards of Medical Studies	0	17
R Cabo García, I Grau León.	Frequency of temporomandibular disorders in the area of Rampa Polyclinic, Plaza de la Revolución.	0	17
JA Castillo Mayedo.	Cultural care in Nursing: Need and relevance.	0	16
M Almaguer López, R Herrera Valdés.	Global epidemic of chronic vascular diseases: A new paradigm and challenge.	0	16
CR Victoria García-Viniegras.	Quality of life in patients with in chronic illnesses	0	16
R Hodelín Tablada.	Ethics and Bioethics in undergraduate education. Introductory lecture: The teaching of Bioetics in undergraduate education. Reflections.	0	15

In Google Scholar Metrics, it was estimated that the journal had an h5-index which is equal to 8, and the mean of h5 was 12

In its statistical metrics, SciELO offers a graphic assessment of the indicators that were taken into account to evaluate the scientific production of the Revista Habanera de Ciencias Médicas.

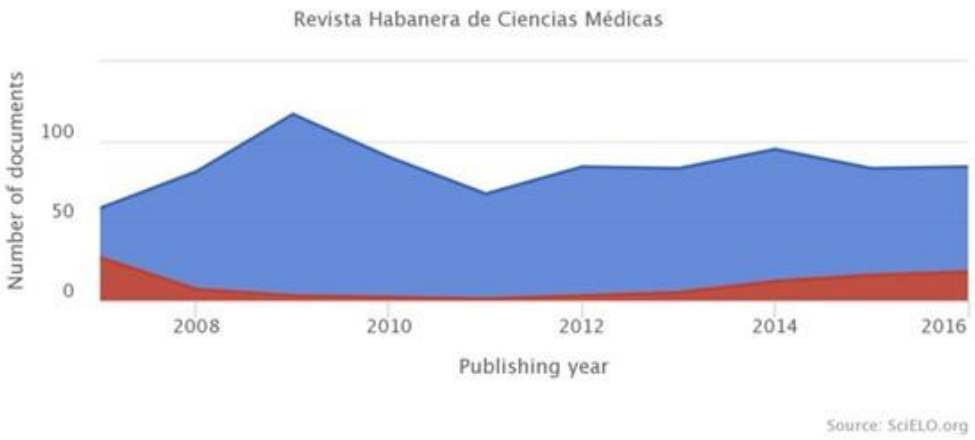

Figure1. Distribution of citable and non-citable documents

Figure 2 shows the proportion of citations received and made as well as the self-citations. Notice that the self-citations represent the lowest rate and indicate whether there are authors of the RHCM that cite articles published in the same journal. It also indicates that the RHCM makes more citations than the ones it receives from a different publication.

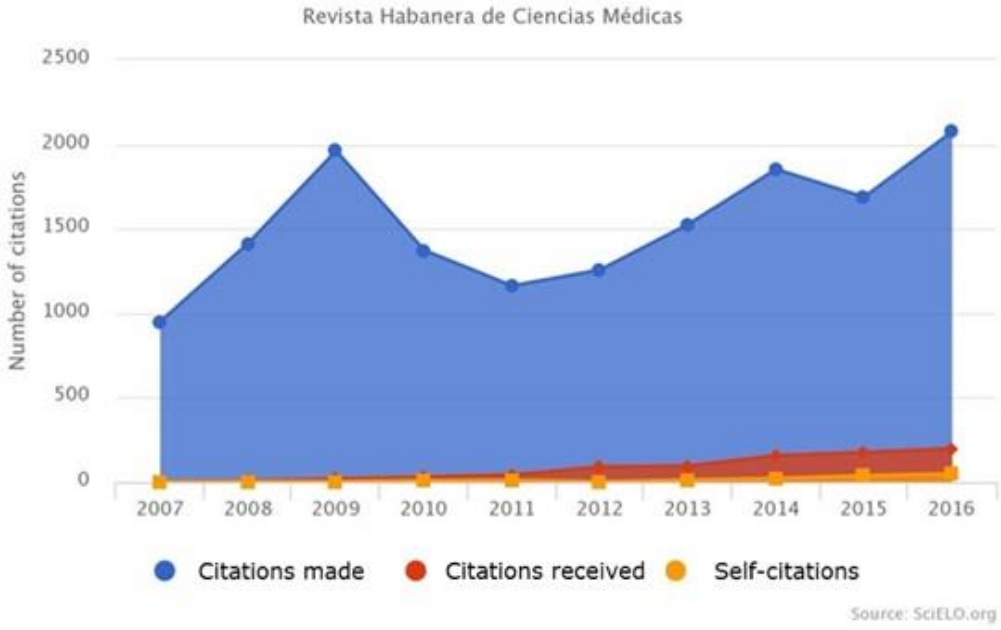

Figure 2. Distribution of citations made, citations received, and self-citations

The useful life of the articles and volumes for the current year is available in graphic form in the following URL: http://analytics.scielo.org/w/accesses?journal=1729-519X&collection=cub

In general, the original articles have the most numerous accesses, as it is observed in Figure 3.

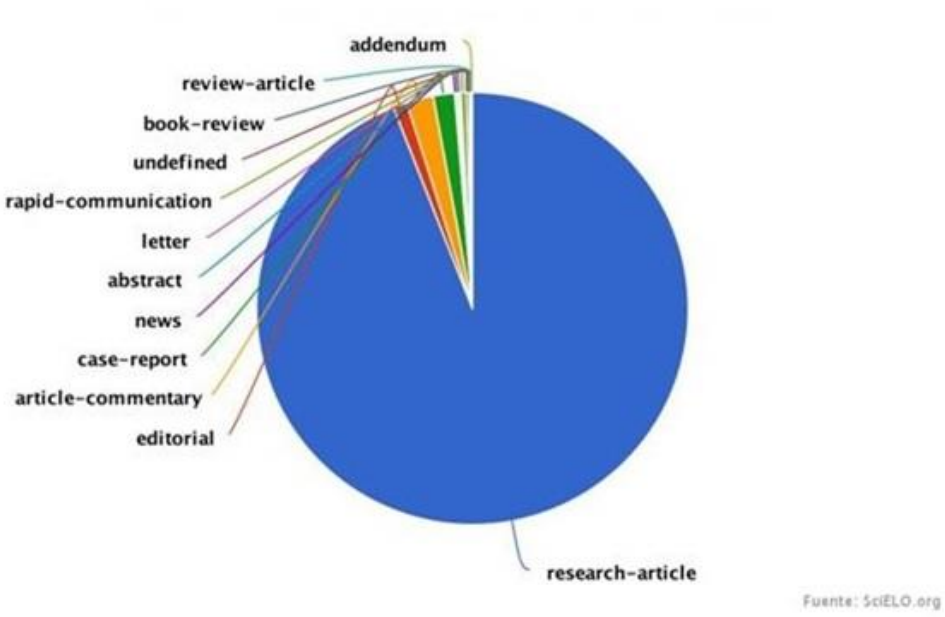

Figure 3. Total of accesses by various types of documents

Figure 4 shows that the most published types of articles in the journal are the ones that present results of original research, followed by the editorials.

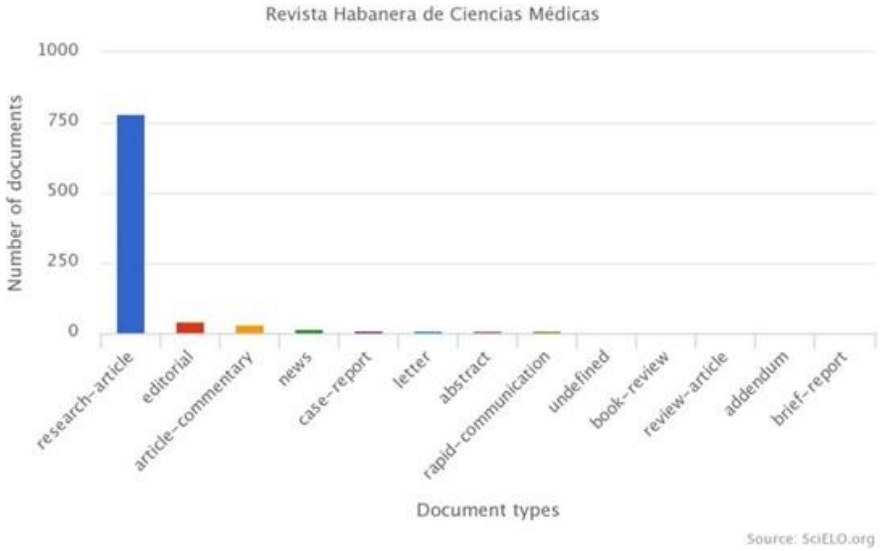

Figure 4. Documents distribution by document type

The Revista Habanera de Ciencias Médicas published most articles in the year 2009. It can be a fact that favored that the articles published that year were the most cited ones. This fact is observed in a smaller proportion in 2014 because it was a year in which the average of published articles was surpassed. This information can be taken from URL: http://analytics.scielo.org/w/publication/article?journal=1729-519X&collection=cub

The Revista Habanera de Ciencias Médicas has also published articles of different authors from other countries, mainly from Latin America, such as: Brasil, Argentina, México, and Venezuela. This geographic area shows the countries with most number of collaborations with the journal. These data can be taken from URL: http://analytics.scielo.org/w/publication/article?journal=1729-519X&collection=cub

The distribution of authors per articles shows a greater frequency of articles written by three authors, followed by articles written by only one author; and then, the ones that are written in pairs. This information is available from URL: http://analytics.scielo.org/w/publication/article?journal=1729-519X&collection=cub.

DISCUSSION

The evaluation of a scientific journal is carried out through indicators of excellence, which include methodological and scientific aspects that can be measured.

Table 1 expresses that a little more than a thousand authors from different origins have published in RHCM, but these authors are mainly from Cuba, and particularly from the University of Medical Sciences of Havana. A simple analysis reveals us that many professors and students from this university have never published in this journal, when taking into account the teaching staff and the increasing number of students; however, if the indicator of the scientific publications is considered in all the annual evaluation process of the professors, then it can be inferred that they do not make an efficient use of the journal.

Another interpretation that can be made with regard to the results shown in Table 1 is that the h-index of the journal is poor, although a sustained increase can be observed during the last years; and, certainly, as this indicator combines the elements of productivity with visibility, then it indicates that we should achieve that our authors and articles receive more citations.

When we observe the most cited articles by Google Scholar in Table 2, we realize that many professors from our teaching staff excel in a prominent way. Similarly, it is highlighted that the main topics that discuss the most cited articles deal with Odontology; quality of teaching; and cancer; and they correspond to the time period from 2003-2011. This is an important aspect because it permits to set future strategies to give priority to the articles that deal with these topics of research.

Table 3 shows a significant fact; it demonstrates that both the articles and the volumes which are even more accessed at present, are the ones which were published during the three-year period 2008-2010, which would require a study of contents that come out from the objectives of

this work, although we should consider that it was in those years when the RHCM published the most quantity of articles.

In 2008, there was an interesting event for Cuban medical journals, and it was the entry of 18 Cuban journals to Scopus, the database represented by the multinational Elsevier. The fact that these volumes are the most cited ones may some way be linked to the "discovery" of the Cuban medical journals by the international scientific community that only accesses to the Internet.[16]

A very important help has been the inclusion of the journal in the SciELO Citation Index, which reaches a high visibility because it is consulted by readers that search for the main scientific critics (main stream) that supports the Web of Science.

It can be observed in Table 4 that the number of citations that the articles published in RHCM has in this prestigious database is lower than the ones that can be reported by using Publish or Perish to analyze Google Scholar data; however, these citations can have a greater qualitative weight because they are made in journals of main scientific current, which is considered a wonderful opportunity for the journal to be visible in those publications of the so-called first quartile, according to the classification of publications of the Cuban Ministry of Higher Education (MES). The most topics discussed in the articles that have been more cited by Science Citation Index are related to medical education, Scienciometry, and the diseases of highest prevalence.

The comparative analysis of the citations reported by Google Scholar and SciELO Citation index (Table 5) allows the assessment and the difference between readers from one or another database. Some articles among the most cited ones in one or another database are repeated, which could be a content analysis aim, and also the aim of topics of greatest impact for one or another user.

In accordance with a scientific journal, there is a predominance of citable articles (Figure 1), although there is an increase of the non-citable ones in the latest years; therefore, the editorial board of the journal should consider this tendency as an alert, although the proportion is not alarming yet. It is important to highlight that the non-citable published articles reduce the visibility from a science metric point of view, and they mainly present topics that are not essentially related to sciences; nevertheless, the Journal also has other informative and educative functions to cover, which take into account the essential functions of the university.

The total of citations that RHCM receives is still insufficient, but its pace is increasing. This can be observed in Figure 2 that shows the number of citations received during the last period according to SciELO database, and in the comparison between the citations received and made. We consider that our authors do not cite the articles of the own journal, which could indicate that they do not make an exhaustive bibliographic search in the database in which the journal is indexed, and that the national articles are not considered frequently.[10,11]

This same phenomenon is observed in other Cuban journals indexed in SciELO, and the national scientific production in general.[2] In this sense, the authors who send their manuscripts to a determined journal, are not necessarily subjected to cite articles about those topics published in it; however, it would be pertinent for the editors to have the possibility to see the most

current and relevant works that are cited in the journal in which they are working.

The consultations of articles about results of original researches are followed by the comments or criticisms to articles (Figures 3 and 4). The interest of readers on the articles that analyze a health situation or present a critical study on a topic calls the attention. This is an important quality indicator, because in a way the journal can be able to publish the most quantity of original articles, it could bring more readers´ interest on its topics, although the mere fact of having an appropriate number of original contributions does not make it a journal with higher or lesser bibliometric impact. For this, we must take into account mainly the validity, relevance, and the applicability of the published articles, since the most important purpose of scientific communication within the medical field is the improvement of health care by means of the clinical /and or/ teaching practice of the results of these studies.

Although it a topic which has been under discussion for both its weakness and its metric indicator; we can ascertain that the times a volume of the journal or the abstracts about some articles have been consulted and downloaded in both pdf format or html, can be used as a metric variable that contributes to the analysis of the journal.[15] The volumes in any of the formats previously mentioned were analyzed and downloaded in the period 2009-2010.

As a general rule, there is an adequate behavior of the average number of authors per work, which is praised. The number of cited authors could increase to the extent that the journal manages to be inserted in other databases and social networks.[12,13]

It has been proven that all the metric indicators rise when the journal or the author uploads the articles to the social networks.[14,15] A future determination of the editorial board of the RHCM is to be inserted in the social networks and, above all, in the science networks which are more rigorously academic, and the ones which are visited by an increasing number of researchers all over the world. Researchers and/or authors of the University of Medical Sciences of Havana are being conscious of the need to create their profiles in these social networks to strengthen their visibility and, therefore, their citation indexes.[23]

We should point out that all the works that are cited by Publish or Perish, being Google Scholar their database, receive all the citations that also appear in SciELO Citation index. Also, many articles that are widely cited according to Publish or Perish, have no citation in SciELO Citation index. The latter is the database consulted by researchers who have the Web of Science as a pattern in the so-called main stream. This does not mean that RHCM is in that stream, but the journal is in the nearest limit which can “drag” us to this wide access database. The inclusion in this database was analyzed by SciELO, and the journal will be there until it demonstrates that it is capable of being citable by the main scientific stream, and that it is a permanent meter for measuring quality.

We declare as a limitation of the study that it does not consider the metric analysis made by other databases where the RHCM is included; and also, that it does not study deeply all the family derived from the indexes that the study could complete.

CONCLUSIONS

The Revista Habanera de Ciencias Médicas has demonstrated to be a journal, which is associated with a university institution. It is also an ascending platform that makes the scientific production of its teaching staff known; placing its results among the most positioned journals related to health topics in databases of the greatest coverage, which is demonstrated during the analysis of its metric indicators.

RECOMMENDATIONS

We recommend to incorporate the bibliometric studies of the journal into the analysis of the Editorial Board in order to enrich the editorial policies and improve the visibility in the main databases where it is included.

REFERENCES

1. Scientific Electronic Library Online (SciELO). Cited: 2016 Oct. 26. Available from: http://www.scielo.org/php/index.php?lang=es

2. Benet-Rodríguez M, Morejón-Giraldoni A. Posicionamiento de las revistas científicas de la salud en Cuba según el índice h5 obtenido del Google Acholar Metrics. Medisur [revista en Internet]. 2016 Cited: 2016 Apr. 22; 14(2): [approx. 9p.]. Available from: http://www.medisur.sld.cu/index.php/medisur/article/view/3254

3. Smith R. The trouble with medical journals. J R Soc Med. 2006; 99:115-9.

4. Harzing AW. Publish or Perish 2016. Cited: 2016 Oct. 28. Available from: http://www.harzing.com/pop_5.23.1.6146

5. Google Scholar. Cited: 2016 Oct. 28. Available from: http://scholar.google.com/

6. Silva Ayçaguer LC. El índice h y Google Académico: una simbiosis cienciométrica inclusiva. ACIMED [revista en Internet]. 2012 Cited: 2016 Jan. 24; 23 (3): [approx. 17p]. Available from: http://scielo.sld.cu/scielo.php?pid=S1024-94352012000300009&script=sci_arttext

7. Scientific Electronic Library Online (SciELO). Indicadores bibliométricos SciELO. Cited: 2016 Nov. 4. Available from: http://www.scielo.org/php/level.php?lang=es&component=44&item=25

8. Thompson Reuter. SciELO citation index. Cited: 2016 Nov. 4. Available from: http://thomsonreuters.com/en/products-services/scholarly-scientific-research/scholarly-search-and-discovery/scielo-citation-index.h

9. Google Scholar. Google scholar metrics. Cited: 2016 Nov. 4. Available from: https://scholar.google.com/citations?view_op=top_venues

10. Dorta-Contreras AJ. En defensa de nuestra producción científica. Acimed 2006; 14(3). Cited: 2016 Nov. 7. Available from: http://bvs.sld.cu/revistas/aci/vol14_3_06/aci15306.htm

11. Dorta-Contreras AJ. Evidenciar la ciencia cubana. ACIMED 2008; 17 (2). Cited: 2016 Nov. 7. Available from: http://bvs.sld.cu/revistas/aci/vol17_2_08/aci01208.htm

12. Allen HG, Stanton TR, Di Pietro F, Moseley GL. Social media release increases dissemination of original articles in the clinical pain sciences, PLOS ONE 2013; 8 (7) e68914.

13. Alonso Arévalo J, Cordón-Garcia JA, Maltrás Barba B. Altmetrics: medición de la influencia de los medios en el impacto social de la investigación. CDM. 2016; 27 (1). Cited: 2016 Nov. 7. Available from: http://dx.doi.org/10.5209/rev_CDMU.2016.v27.n1.52870

14. Priem J, Piwowar H, Hemminge B. Altmetrics in the wild: Using socialmedia to explore scholarly impact. Arxiv 2012. Cited: 2016 Nov. 7. Available from: http://arxiv.org/abs/1203.4745

15. Borrego, Ángel. Altmétricas para la evaluación de la investigación y el análisis de necesidades de información. El profesional de la información. 2014; 23 (4): 352-357. Cited: 2016 Nov. 15. Available from: http://dx.doi.org/10.3145/epi.2014.jul.02

16. Guerrero-Bote VP, Moya-Anegón, F. Relationship between Downloads and Citation and the influence of language. En: Gorraiz J, Schiebel E, Gumpenberger C, Hörlesberger M, Moed H. Proceedings of the 14th International Conference on Scientometrics and Informetrics - ISSI 2013 Vienna: Austrian Institute of Technology. P. 1469-1484.

17. Cañedo Andalia R, Dorta Contreras AJ. SCImagoJournal& Country Rank, una plataforma para la evaluación del comportamiento de la ciencia según fuentes documentales y países. ACIMED 2010; 21(3). Cited: 2016 Nov. 15. Available from: http://www.acimed.sld.cu/index.php/acimed/issue/view/3

18. Publish or Perish User's Manual. Melbourne: Tarma Software Research; 2007.

19. Gallardo Sánchez Y, Gallardo Arzuaga R.L, Fonseca Arias M, Pérez Atencio M.E. Caracterización cienciométrica de la producción científica de MEDWAVE, 2010-2014. Medwave; 2016 Sep; 16(8):6538. Cited: 2016 Nov. 15. Available from: http://www.medwave.cl/link.cgi/Medwave/Revisiones/RevisionTemas/6538

20. Jin BH. The AR-index: complementing the h-index. ISSI Newsletter 2007; 3(1):6. Cited: 2016 Nov 15. Available from: https://pdfs.semanticscholar.org/3d59/79ffd683865cef93b81051fee751083016ef.pdf

21. Anne-Wil Harzing. From h-index to hIa: The ins and outs of research metrics. Research in International Management. 2016 Jul.

22. Cárdenas de Baños L, Bencomo García D, Sánchez Aldereguía S, Fundora- Mirabal JA, Dorta Contreras AJ. Producción científica y visibilidad de la Cátedra de Comunicación Científica de la Universidad de Ciencias Médicas de La Habana. Revista Habanera de Ciencias Médicas [revista en Internet]. 2016; 15(6):[approx. 0 p.]. Cited: 2017 Jan. 18. Available from: http://www.revhabanera.sld.cu/index.php/rhab/article/view/1085

23. Dorta Contreras AJ. Colaboración internacional y visibilidad de la producción científica por las métricas alternativas. Revista Habanera de Ciencias Médicas [revista en Internet]. 2016; 15(6): [approx. 0 p.]. Cited: 2017 Jan. 18. Available from: http://www.revhabanera.sld.cu/index.php/rhab/article /view/1260

Ray Valdés Balbín. Universidad de Ciencias Médicas de La Habana. La Habana, Cuba.
E-mail: rvaldes@infomed.sld.cu