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Some metrics of the articles on cardiology topics published in *Revista 16 de abril*

Algunas métricas de los artículos sobre temas de cardiología publicados en la Revista 16 de abril

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ABSTRACT

Introduction: research on cardiology topics is a challenge and a necessity for the scientific community due to the high morbidity and mortality of cardiovascular diseases in Cuba and the world. Objective: to describe the articles on cardiology topics published in Revista 16 de abril. Method: an observational, descriptive and cross-sectional bibliometric study of 48 articles published from January 2014 to December 2021 was carried out. A descriptive analysis was made. Results: the year with the highest number of articles was 2014, with 24 (50 %). There was a predominance of original articles (n = 25; 52,1 %) and review articles (n = 13; 27,1 %). A total of 199 authors were found, from Cuba, mainly male (n = 121; 60,8 %). Articles with 4 or 5 authors predominated (n = 13; 27,1 % in each case). They came from 9 institutions and the most productive was the University of Medical Sciences of Villa Clara (n = 65; 33 %). 1 049 references were used, with an average of 22 references per article. The Price index was between 0,11 and 0,70. A low number of citations was found (n = 21). Conclusions: the University of Medical Sciences of Villa Clara led the scientific production. Original articles predominated, signed by various authors, mainly male. A low student scientific production on cardiology was confirmed, with low citation rates.

Keywords: Cardiology; Bibliometrics; Authorship; Science; Students; Research; Worked.

RESUMEN

Introducción: la investigación en temas de cardiología constituye un reto y una necesidad para la comunidad científica debido a la alta morbilidad y mortalidad de las enfermedades cardiovasculares en Cuba y el mundo. Objetivo: describir los artículos sobre temas de cardiología publicados en la Revista 16 de abril. Método: se realizó un estudio bibliométrico de diseño observacional, descriptivo y transversal, de 48 artículos publicados en el periodo de enero del 2014 a diciembre del 2021. Se realizó un análisis descriptivo. Resultados: el año con mayor número de artículos fue el 2014, con 24 (50 %). Hubo un predominio de artículos originales (n = 25; 52,1 %) y de revisión (n = 13; 27,1 %). Se encontraron un total de 199 autores, todos de nacionalidad cubana, fundamentalmente del sexo masculino (n = 121; 60,8 %). Predominaron los artículos que tenían 4 o 5 autores (n = 13; 27,1 % en cada caso). Provinieron de 9 instituciones y la más productiva fue la Universidad de Ciencias Médicas de Villa Clara (n = 65; 33 %). Se emplearon 1 049 referencias, con una media de 22 referencias por artículo. El índice de Price se encontró entre 0,11 y 0,70. Se encontró un bajo número de citas (n = 21). Conclusiones: la Universidad de Ciencias Médicas de Villa Clara lideró la producción científica. Predominaron los artículos originales, firmados por varios autores, principalmente del sexo masculino. Se confirmó una baja producción científica estudiantil sobre cardiología, con bajos índices de citación.

Palabras clave: Cardiología; Bibliometría; Autoría; Ciencia; Estudiantes; Investigación; Trabajo.

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INTRODUCTION

Scientific research has provided since its inception a preparation for students of medical sciences; The student who ventures into research develops qualities and aptitudes that are different from those who do not do research, such as critical thinking, the ability to investigate and seek objective solutions to specific situations, and interest in constantly updating knowledge[1].

With the creation of the Student Scientific Groups, students' interest in science has been promoted, from the beginning of their training as future health professionals. The student scientific movement in Cuba has undergone a process of transformations where Cuban universities have played a central role in scientific research, highlighting the importance of science in the training of undergraduate students, as well as the growing need to publicize the results of their investigations through the different journals of the country, especially the student ones[2].

Revista 16 de abril has undergone a historical evolution since the year it was founded; It is the oldest of its kind in Latin America. He has carried out scientific and social work in the publication of works of various kinds, among which the original articles stand out as those with the greatest impact[3].

Cardiology is the branch of Medicine that is responsible for treating and diagnosing cardiovascular diseases, which have a high incidence in Cuba and the world, and cause the death of a large number of people every year. This justifies the need to investigate these topics, as well as the fact that it is positioned as one of the preferred research lines among students[4].

The objective of this study was to describe the articles on cardiology topics published in Revista 16 de abril.

METHOD

Type of study: A bibliometric study of observational, descriptive and cross-sectional design was developed in the period from January 2014 to December 2021.

Universe and sample: the universe was made up of the 48 articles published on cardiology topics in *Revista 16 de abril* in the aforementioned period. Their selection was done manually. It was fully worked.

Variables and data collection: The variables were studied: number of articles, year of publication, typology, number of authors, sex of authors, most productive institutions, number of references, age of references, Price index (PI)[5], language of references, citations and number of corrected citations (NCC)[6]

The IP was calculated by means of the quotient between the references present in the articles, belonging to the 5 years prior to the receipt of the article, and the total number of references used[6].

The NCC[6] is the result of dividing the number of citations received for an article by the time in years that the article has been published.

For data collection, the journal's Open Journal Systems (OJS) platform (http://www.rev16deabril.sld.cu) was accessed on May 17, 2022 and the articles were downloaded in PDF format. On that same date, a search was carried out in Google Scholar, where the title and authors were used to determine the number of citations that each article had.

A data collection form was used to collect the variables of each article.

Statistical processing: The data was stored in a database and processed using the IBM SPSS 21.0 statistical package. Descriptive statistics were used.

RESULTS

A total of 48 articles were published. The year with the highest number of articles was 2014, with 24 (50%); the ones with the lowest number were the years 2017 and 2018 (fig. 1).

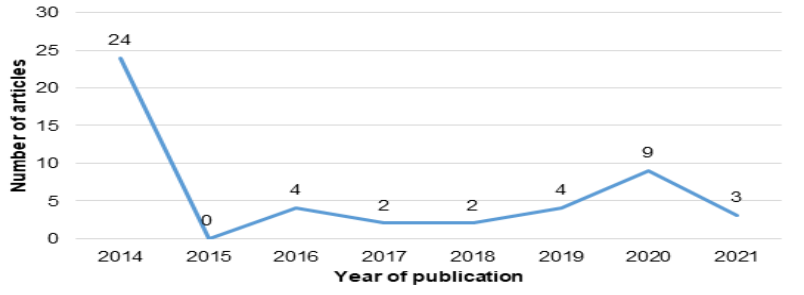

Fig. 1. Number of articles according to year of publication

Table 1 shows a predominance of original articles (n = 25; 52,1 %) and review articles (n = 13; 27,1 %).

Table 1. Articles according to their type

Typology	No.	%
Original	25	52,1
Short original	2	4,2
Case presentation	2	4,2
Review	13	27,1
Special	4	8,3
Letter to the editor	2	4,2
Total	48	100

A total of 199 authors were found, all of Cuban nationality, mainly male (n = 121; 60,8 %). Articles with 4 or 5 authors predominated (n = 13; 27,1 % in each case), as shown in Table 2.

Table 2. Articles according to number of authors

Number of authors	No.	%
1	1	2,1
2	3	6,3
3	11	22,9
4	13	27,1
5	13	27,1
6	7	14,6

The articles came from 9 institutions and the most productive was the University of Medical Sciences of Villa Clara (n = 65; 33 %), followed by the University of Medical Sciences of Havana, with 53 documents, for 26,9 % (table 3).

Table 3. Institutions according to their productivity

Institutions	No.	%
UMS of Villa Clara	65	33
UCM of Havana	53	26,9
UCM of Las Tunas	22	11,2
UCM of Pinar del Río	15	7,6
UCM of Santiago de Cuba	13	6,6
UCM of Holguín	11	5,6
UCM of Cienfuegos	8	4,1
UCM of Guantánamo	6	3
UCM of Camagüey	2	2
Total	199	100

Legend: UMS – University of Medical Sciences.

1049 references were used, with an average of 22 references per article, concentrated mainly in original articles (n = 565) and review articles (n = 328). The PI was between 0,11 (case presentation) and 0,70 (letter to the editor).

The largest number of references used was in Spanish, with a total of 644 (Table 4).

Table 4. Articles according to type and characteristics of the references

Typology	No. of references	No. of references fewer than 5 years old	Price index	No. of references in Spanish	No. of references in English
Original	565	256	0,45	365	200
Short original	10	6	0,60	8	2
Case presentation	18	2	0,11	12	6
Review	328	179	0,55	188	140
Special	98	26	0,27	57	41
Letter to the editor	30	21	0,70	14	16
Total	1049	490	0,33	644	405

A low number of citations was found (n = 21). A special article was the most outstanding, with 9 citations (table 5).

Table 5. Articles cited

No.	Year	Typology	Title	No. of references	NCC
1	2014	Special	Factores de riesgo que influyen en la no adherencia al tratamiento farmacológico antihipertensivo	9	1,13
2	2020	Original	Estimación del riesgo cardiovascular en pacientes hipertensos del reparto Santiesteban del municipio Holguín	3	1,5
3	2014	Special	Riesgo cardiovascular global en pacientes mayores de 40 años. Consultorio 23. Policlínico "Turcios Lima". 2009-2010	3	0,38
4	2014	Special	Riesgo cardiovascular global en pacientes mayores de 40 años	2	0,25
5	2020	Review	Relación entre la COVID-19 y las enfermedades cardiovasculares	2	1
6	2014	Review	La miocardiopatía periparto en la cardiología moderna	1	0,13
7	2014	Special	Diabesidad y su riesgo cardiovascular global	1	0,13

DISCUSSION

Bibliometric studies are gaining more and more preeminence for the scientific community, because they contribute to the understanding of the state of research areas or topics. It is known that they identify phenomena, trends and regularities in the field of science, which is of great value when analyzing the results obtained in this order and distributed around the world[7].

Salgado Fuentes *et al.*[8] claim that Cuba's scientific production in cardiology and cardiovascular surgery tends to increase significantly, but it is necessary to strengthen scientific training in these areas to improve quality and impact, which shows the prevailing need for articles on the topic. It is recognized that students' scientific publications can be a means to encourage and use their knowledge in conducting research.

Original articles are the basis of scientific research and contribute to the creation of new knowledge and its innovation. The study by Vitón Castillo *et al.*[4] describes the scientific production on cardiology published in student scientific journals and shows results close to those found by the authors. An unfavorable production of originals on the subject was observed in the *Revista 16 de abril.*

According to several studies with a predominance of articles with more than one signing author,[9,10,11] scientific research is highly complex, so the participation of several authors is necessary to carry it out. Teamwork is essential to achieve higher quality results, as well as the analysis of a greater amount of data, which allows for a higher quality of research. That is why popular science journals have broadened the concept of authorship over time, and this has brought with it greater heterogeneity in the gender of the authors. A gender perspective on authorship reveals in this research a predominance of the male sex, which disagrees with what was revealed in the study by Valdespino Alberti *et al*.[12].

The research interests among health professionals in the area of cardiology are directly related to the aspirations of the producers, which are framed by a line of personal research closely related to their job occupation, as well as the interest in investigating, improve and socialize a specific topic. The same occurs with students, who aspire from the beginning of their career to have a good curriculum with participation in scientific events, and some are inclined to obtain an assistantship in the specialty of cardiology, which creates a tutor- student who promotes the teaching and research spheres in this specialty.

Cuba has an active science movement, and each year hundreds of studies make their way from popular science conferences to national student forums. In addition, regional student scientific events are organized, creating an unparalleled space for students to develop and strengthen proper attitudes towards scientific research[13]. In these spaces, students show their investigative skills and cardiology topics gain great interest, results that are later published in scientific journals.

The University of Medical Sciences of Villa Clara has several relevant scientific producers, as suggested by the results of this research, which highlights the commendable work carried out in the province in order to improve the scientific level of its doctors. It should be noted that the largest number of articles do not come from the journal's sponsoring province, as was to be expected. The publication of articles from other provinces is indicative of the visibility and recognition of the journal among Cuban students, as well as the need for research on the subject.

The updated bibliographical references in an article are an important tool in research. Through them, criteria are given about the ideas of other researchers, current work is combined with previous work, plagiarism is avoided, and it is easier for the readers of the documents to find a greater amount of resources.

In a study carried out by Vitón Castillo *et al*.[14] on scientific production, the letters to the editor presented a PI of 0,86, while the case presentations showed one of 0,28; These results are greater than those found here. These results contrast with the study carried out by García Raga *et al*.[15], where the PI ranged between 0,22 and 0,24, with a degree of updating lower than that found in the present one. The authors consider that the topicality of the references is a matter of great importance, so this aspect must be supervised for the publication of articles due to the constant advancement of science. The percentage of references listed in the last 5 years is an indicator of the quality of the research.

Regarding the language of the references, this does not agree with the study carried out by Flores Fernández *et al*.[16], who reported 85 % of the references used in English. This may be due to the limited access to information in the country, the existing difficulty in understanding a foreign language, as well as the existence of items requiring payment. In addition, studies on cardiology and cardiovascular surgery require a range of expensive equipment typical of developed countries.

Publishing the results of scientific research is an opportunity to transfer new knowledge. A challenge for journals today is to develop the interest of their readers in order to increase the views and citations of the articles. The so-called NCC is a proofreader that measures the effect of a publication based on the number of citations it receives and the popularity of the study since it was published; that is, if it has been published for a longer period of time, it is likely that it will be cited more. The low number of cited articles may be due to several factors. Publications in journals are rarely advertised. Publishing strategies must be learned as part of the editorial process to gain a better understanding of the science, as well as editorial production strategies to better serve both authors and readers.

CONCLUSIONS

The University of Medical Sciences of Villa Clara led the scientific production. Original articles predominated, signed by various authors, mainly male. A low student scientific production on cardiology was confirmed, with low citation rates.

REFERENCES

1. Aveiro Róbalo TR, Escobar Salinas JS, Ayala Servín JN, Rotela Fisch V. Importancia de las sociedades científicas de estudiantes de medicina en Latinoamérica. Investigación edu médica [Internet]. 2019 [cited 11/09/2022]; 8(29):23-29. Available from: http://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S2007-50572019000100023&lng=es
2. Lozada Martínez ID, Pérez Orozco DJ, Moscote Salazar LR. El logro titánico de publicar un artículo científico

siendo estudiante de medicina. Acta Neurol Colomb. [Internet]. 2021 [cited 11/09/2022]; 37(4):224-225. DOI: 10.22379/24224022392
3. Hernández García F, Robaina Castillo J, Martínez Riverón D. La Revista 16 de abril, su papel en el desarrollo del movimiento científico estudiantil universitario de las Ciencias Médicas en Cuba. Revista 16 de abril [Internet]. 2020 [cited 11/09/2022]; 59(278):e730. Available from: http://www.rev16deabril.sld.cu/index.php/16_04/article/view/730
4. Vitón Castillo AA, Díaz Samada RE, Pérez Álvarez DA, Casín Rodríguez SM, Casabella Martínez S. Análisis bibliométrico de la producción científica sobre cardiología publicada en las revistas científicas estudiantiles cubanas (2014-2018). CorSalud [Internet]. 2019 [cited 11/09/2022]; 11(1):39-45. Available from: http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S2078-71702019000100039&lng=es
5. Arias FG. Obsolescencia de las referencias citadas: un mito académico persistente en la investigación universitaria venezolana. E-Ciencias de la Información [Internet]. 2017 [cited 11/09/2022]; 7(1):78-90. DOI: 10.15517/eci.v7i1.26075_
6. Aleixandre Benavent R, González de Dios J, Castelló Cogollos L, Navarro Molina C, Alonso Arroyo A, Vidal Infer A, *et al*. Bibliometría e indicadores de actividad científia (III). Indicadores de impacto basados en las citas. Acta Pediatr Esp [Internet]. 2017 [cited 12/11/2022]; 75(5-6):e75-e84. Available from: https://medes.com/publication/123506
7. Viton Castillo AA, Casabella Martínez S, Germán Flores L, García Villacampa G, Bravo Malagón Y. Análisis bibliométrico de la producción científica de la Revista Universidad Médica Pinareña, 2014-2017. Universidad Médica Pinareña [Internet]. 2018 [cited 12/11/2022]; 14(3):238-47. Available from: https://revgaleno.sld.cu/index.php/ump/article/view/293
8. Salgado Fuentes C, Torrecilla Venegas R, Hernández Rodríguez E. Producción científica cubana en SCOPUS sobre cardiología y cirugía cardiovascular durante 12 años. Revista 16 de abril [Internet]. 2022 [cited 12/11/2022]; 61(283):e1547. Available from: https://rev16deabril.sld.cu/index.php/16_04/article/view/1547
9. Landrove Escalona E, Hernández González E, Palomino Cabrera A, Avila Díaz D, Mitjans Hernández D, Fajardo Quesada A. Métricas de los artículos sobre farmacología publicados en la Revista 16 de abril. Revista 16 de abril [Internet]. 2022 [cited 12/11/2022]; 61(283):e1568. Available from: http://www.rev16deabril.sld.cu/index.php/16_04/article/view/1568
10. Rolo Mantilla FM, Velásquez Godoy Y, Collado Rolo L, Fuentes García S, Vega Díaz JJ, Arango González F. La publicación científica en Médica Electrónica. Trienio 2016-2018. Rev Med Electrón [Internet]. 2019 [cited 12/11/2022]; 41(4):928-939. Available from: http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1684-18242019000400928&lng=es
11. Chaple Gil AM, Corrales Reyes IE, Quintana Muñoz L, Fernández E. Indicadores bibliométricos sobre evaluación de programas de estudio de ciencias médicas en revistas biomédicas cubanas. Rev haban cienc méd [Internet]. 2020 [cited 12/11/2022]; 19(1):154-166. Available from: http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1729-519X2020000100154&lng=es
12. Valdespino Alberti AI, Álvarez Toca I, Sosa Palacios O, Arencibia Jorge R, Dorta Contreras AJ. Scientific production in the Cuban Journal of Pediatrics during the period 2005-2016. Rev Cubana Pediatr [Internet]. 2019 [cited 12/11/2022]; 91(2):e571. Available from: http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S0034-75312019000200004&lng=es
13. Corrales Reyes IE, Fornaris Cedeño Y, Dorta Contreras AJ. Es necesario estimular la producción científica estudiantil cubana. Rev cuba inf cienc salud [Internet]. 2018 [cited 12/11/2022]; 29(1):109-111. Available from: http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S2307-21132018000100009&lng=es
14. Vitón Castillo A, Dias Samada R, Benítez Rojas L, Rodríguez Venegas E, Hernández García O. Producción científica sobre oncología publicada en las revistas estudiantiles cubanas, 2014-2019. Rev Electrón Zoilo Marinello [Internet]. 2020 [cited 12/11/2022]; 45(4):e2258. Available from: https://revzoilomarinello.sld.cu/index.php/zmv/article/view/2258
15. García Raga M, Corrales Reyes IE, Rodríguez García MJ, Algas Hechavarría LA, Rodríguez Suárez CM, Espinosa Guerra AV. Análisis Bibliométrico sobre publicaciones científicas de temas pediátricos en Multimed. 2012-2016. MULTIMED [Internet]. 2017 [cited 12/11/2022]; 21(6):853-874. Available from: http://www.revmultimed.sld.cu/index.php/mtm/article/view/676
16. Flores Fernández C, Aguilera Eguía R, Saldivia Saldivia AM, Gutiérrez Parra V, Pérez Galdavini VM, Torres Morera LM. Análisis bibliométrico de la Revista de la Sociedad Española del Dolor: 2007-2016. Rev Soc Esp Dolor [Internet]. 2018 [cited 12/11/2022]; 25(3):170-177. Available from: 10.20986/resed.2018.3627/2017

CONFLICT OF INTERESTS
The authors declare no conflict of interests.

AUTHORSHIP

Eduardo Antonio Hernández-González: conceptualization, research, data curation, validation, formal analysis, visualization, original drafting, supervision, writing, revision, and final editing.
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