








SHORT COMMUNICATION

Cuban Scientific Production on Intensive Care and Emergency Medicine in Scopus (2019-2021)

Producción científica cubana sobre Medicina Intensiva y Emergencias en Scopus (2019-2021)

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ABSTRACT

Introduction: health research is a crucial link for scientific development. Research in intensive medicine is essential to improve medical care, generate new treatments, reduce mortality and save resources.

Objective: to characterize the Cuban scientific production in Intensive and Emergency Medicine in Scopus between 2019 and 2021.

Method: an observational, descriptive, bibliometric study of articles on Emergency Medicine and Critical Care and Intensive Care Medicine of Cuban authorship indexed in Scopus between 2019 and 2021 was carried out. SciVal was used for data retrieval and analysis.

Results: 18 articles were published, and 184 citations were received, with an average of 2,33 and 3,67 articles per year for the Emergency Medicine and Critical Care and Intensive Care Medicine areas, respectively; the percentage of excellence was 60 and 37,5 %, respectively. For both areas, international collaboration predominated. The most productive author was Dr. C. Frank Daniel Martos-Benítez. The most productive institution was the “Hermanos Ameijeiras” Clinical Surgical Hospital (Ndoc=4, Authors=8, Ncit=33).

Conclusions: there is a slight increase in annual scientific production compared to previous periods, focusing on first and second-quartile journals. Collaboration, especially the international one, was shown as standard in the publication.

Keywords: Electronic Journals; Bibliometrics; Bibliometric Indicators; Scientific Production Indicators; Bibliography of Medicine, Scientific Production; Journal Article.

RESUMEN

Introducción: la investigación en salud constituye un eslabón clave para el desarrollo científico. La investigación en medicina intensiva es esencial para mejorar la atención médica, generar nuevos tratamientos, reducir la mortalidad y ahorrar recursos.

Objetivo: caracterizar la producción científica cubana en Medicina Intensiva y Emergencias en Scopus entre 2019 y 2021.

Método: se realizó un estudio observacional, descriptivo, bibliométrico de los artículos con autoría cubana publicados en Scopus entre 2019 y 2021 que respondieran a las áreas *Emergency Medicine* y *Critical Care and Intensive Care Medicine*. Para la obtención y análisis de los datos se utilizó SciVal.

Resultados: se publicaron 18 artículos y se recibieron 184 citas, con una media de 2,33 y 3,67 artículos por

año para las áreas *Emergency Medicine* y *Critical Care and Intensive Care Medicine* respectivamente; el porcentaje de excelencia fue del 60 y el 37,5 % respectivamente. Para ambas áreas predominó la colaboración internacional. El autor más productivo fue el DrC. Frank Daniel Martos-Benítez y la institución el Hospital Clínico Quirúrgico “Hermanos Ameijeiras” (Ndoc=4, Autores=8, Ncit=33).

Conclusiones: se exhibe un discreto aumento de la producción científica anual al comparar con periodos anteriores, la cual se centró en revistas de primer y segundo cuartil. La colaboración, en especial la internacional, se mostró como estándar en la publicación.

Palabras clave: Revistas Electrónicas; Bibliometría; Indicadores Bibliométricos; Indicadores de Producción Científica; Bibliografía de Medicina, Producción Científica; Artículo de Revista.

INTRODUCTION

Research is necessary within the field of Health Sciences to promote development. Advances in the body of doctrines and knowledge do not occur if research is not the element through which they are produced and validated. However, research is not the final link in generating knowledge but its dissemination.

The results communication of the investigative process is as old as the investigation itself. This is achieved through presentations at scientific events, dissertations, congresses, and publications in scientific journals. All of them constitute the vehicle par excellence.

Intensive medicine is a medical specialty that focuses on the care of patients with severe conditions or situations that compromise the lives of patients. Patients receiving care in an intensive care unit (ICU) can present with various health problems, including organ failure, traumatic injuries, sepsis, neurological disorders, and postoperative complications.

From 2012 - 2017, Cuba presented 6191 articles in journals indexed in Scopus.⁽¹⁾ Fourteen specialties with more than 100 articles were identified in Scopus. However, Intensive and Emergency Medicine was not one of them. This area was identified as the fourth least productive specialty.

Vitón-Castillo et al.⁽²⁾ pointed out the existence of low scientific production in the areas of Emergency Medicine and Critical Care, and Intensive Care Medicine in the period 1996-2019 by Cuban authors (11 and 44 articles respectively).

Research in Intensive Medicine is essential to improve medical care, generate new treatments, reduce mortality, and save resources. Advances in research may improve understanding of the pathophysiology and mechanisms underlying severe conditions, as well as the body's response to them. In turn, it allows optimization in the use of resources, the evaluation of protocols, and improving the patient's life quality. Despite this, a low Cuban scientific production in this area is reported in the most prestigious databases.

The present investigation was conducted to characterize the Cuban scientific production in Intensive and Emergency Medicine in Scopus between 2019 and 2021.

METHOD

An observational, descriptive, bibliometric study of articles with Cuban authorship published in Scopus between 2019 and 2021 oriented to the Emergency Medicine and Critical Care and Intensive Care Medicine areas was carried out. The sample comprised 18 articles, of which 2 were oriented to both areas.

To obtain the data, SciVal was accessed. Cuba was selected as the country, period 2019-2021, and the areas of Emergency Medicine, and Critical Care, and Intensive Care Medicine. A data set with both areas was created and processed.

For data analysis, the following indicators were used:

- Number of documents (Ndoc): refers to the number of documents with Cuban authors published in journals indexed in Scopus under the Emergency Medicine and Critical Care and Intensive Care Medicine areas.
- Number of citations: number of citations received by the articles.
- Percentage of Excellence (PEx): indicates to what extent the publications are present in the most cited percentiles of a universe, that is, how many are in the top 10% of the most cited publications.
- Journal quartile: calculated based on the CiteScore percentile. The CiteScore calculation is based on the number of document citations (articles, reviews, conference papers, book chapters, and data papers) from a journal over four years, divided by the number of the same types of documents indexed in Scopus and published in those same four years. It is divided into Q1 (0-25 %), Q2 (26 % - 50 %), Q3 (51 % - 75 %), and Q4 (76 % - 100 %).
- Field-Weighted Citation Impact: Field-Weighted Citation Impact (FWCI) is an indicator of average citation impact and compares the actual number of citations received for a document to the expected number of citations for the same type of document (article, review, book, or conference proceedings), year of publication and subject area. The metric is always defined with reference to a global benchmark of 1.0 and intrinsically

accounts for differences in citation accumulation over time, citation rates for different document types, and the issue.

- **Collaboration:** indicates to what extent the publications of an entity have international, national, or institutional co-authorship and sole authorship. This number is a count unless the percent symbol (%) is visible. Each publication is assigned to 1 of 4 mutually exclusive collaboration types based on their affiliation information: international, national, institutional, or single author.

- **Journals:** refers to the journal where the article was published.

- **Institution:** refers to the institution declared in the article by the author.

Authorizing an ethics committee or scientific advice was not required as the data was publicly available and/or human beings were involved.

RESULTS

In the EM area, 7 articles were published, for an average of 2,33 articles per year; 111 citations were received, for an average of 37 citations. In the CCICM area, 11 articles were published, and 73 citations were received, for an average of 3,67 articles per year and 6,6 citations per article (table 1).

Metrics	Scale	Emergency Medicine	Crit. Care & Intensive Care Medicine
Ndoc	2019	2	2
	2020	2	5
	2021	3	4
	Total	7	11
Ncit	2019	54	4
	2020	9	24
	2021	48	45
	Total	111	73

In the EM area, a percentage of excellence of 57,1 % was found, and 60 % of the articles were published in first-quartile journals. The articles presented an FWCI of 3,54. Regarding the CCICM area, the percentage of excellence was 27,3 %. 37,5 % of the articles were published in Q1 journals; the FWCI was 1,23 (table 2).

Metrics	Scale	Emergency Medicine (%)	Crit. Care & Intensive Care Medicine
PEx	2019	50	0
	2020	0	0
	2021	66,7	75
Quartile	Q1	60	37,5
	Q2	20	50
	Q3	0	12,5
	Q4	20	0

In the EM area, 18 Cuban authors were collected; in CCICM, 35 Cuban authors were collected. Regarding collaboration, both EM and CCICM international collaboration predominated (71,4 % and 54,6 %, respectively) (table 3).

Only one author with more than one article in the EM area was found, Frank Daniel Martos-Benítez (Ndoc = 2). No journals with more than one published article were registered. In the CCICM area, the *Acta Colombiana de Cuidados Intensivos* journal was the only one to publish more than one article (Ndoc=2, authors=9), and 3 authors published more than one article: Frank Daniel Martos-Benítez (Ndoc=2), Iraida González Martínez (Ndoc = 2) and Lázaro Ibrahim Romero García (Ndoc = 2).

The most productive Cuban institutions were the “Hermanos Ameijeiras” Clinical Surgical Hospital (Ndoc=4, Authors=8, Ncit=33), the Center for Genetic Engineering and Biotechnology (Ndoc=2, Authors=9, Ncit=28), and the National School of Public Health (Ndoc=2, Authors=2, Ncit=0).

Table 3. Distribution of scientific production by type of collaboration

Type of collaboration	Emergency Medicine			Crit. Care & Intensive Care Medicine		
	Ndoc (%)	Ncit	Citations per article	Ndoc (%)	Ncit	Citations per article
International	5 (71,4 %)	92	18,4	6 (54,6 %)	68	11,3
National	2 (28,6 %)	19	9,5	2 (18,2 %)	4	2
Solo institucional	0	0	0	3 (27,3 %)	1	0,3

DISCUSSION

Scopus is one of Elsevier's services. This database contains search and navigation tools in the scientific literature and measurement, evaluation, and management of scientific production.⁽³⁾

The low scientific production in the period is striking since when analyzing the Latin American scientific output in systems such as SciELO, Cuba ranked second in the 2006-2015 period as the largest producer in Latin America (10,52 % of the PC, with a growth rate of 6,30).⁽⁴⁾ Similarly, in the Web of Science database, Cuba is the 7th most productive country in Latin America and the Caribbean.⁽⁵⁾

Vitón-Castillo⁽²⁾ found an average of 0,47 articles per year in the EM area and 1,91 in CCICM. These results were lower than those reported here, which may suggest a developing increase in scientific production. This increase may be conditioned by country policies, which have promoted publication in high-impact journals, as well as an increase in the quality and indexing of national journals.

However, the present investigation shows lower values than those reported by Castejón-de la Encina et al.⁽⁶⁾, who reported an average of 11,3 articles related solely to prehospital care for seriously ill patients per year. This may be conditioned because the study analyzes the scientific production of Spain, which has the journal *Medicina Intensiva*, considered the spotlight journal of the specialty in the Spanish language. Similarly, that country has developed Science and Innovation policies for years aimed at publishing in journals in Scopus and the Web of Science and in journals in the first quartiles within these databases.

Regarding the journals' quartile, it differs from what Corrales Reyes et al.⁽⁷⁾ reported in the Stomatology area, who identified a predominance of articles in Q4 journals. This shows that researchers seek publication in high-impact journals, although the area is currently not very productive in volume. The authors consider it necessary to draw up policies that encourage Cuban journals to reach standards that place them in the first quartiles.

A bibliometric study conducted in the Cuban Journal of Intensive and Emergency Medicine⁽⁸⁾ identified the "Iván Portuondo" General Teaching Hospital and the "Joaquín Albarrán" Clinical Surgical Teaching Hospital as the most productive institutions, a fact that differs from the present investigation.

However, it is like Deroncelle's study⁽⁹⁾, which sought to measure the scientific production of arterial hypertension in Scopus. The study identified the "Hermanos Ameijeiras" Surgical Clinical Hospital as the most productive institution, coinciding with a bibliometric study on the scientific production of Cuban hospitals in Scopus from 1996 to 2016.⁽¹⁰⁾

In the present investigation, it was identified that DrC. Frank Daniel Martos-Benítez was the most productive author and director of the Cuban Journal of Intensive and Emergency Medicine. The authors of this paper consider that being a member of the editorial team of a journal determines knowledge about the scientific publication that leads to publishing in high-impact journals, likewise, avoiding editorial inbreeding or ensuring that the percentage never exceeds the 25 % recommended by various journals, which conditions the search for other means for the dissemination of knowledge.

CONCLUSIONS

There is a slight increase in annual scientific production compared to previous periods, focusing on first and second-quartile journals. The collaboration, especially the international one, was shown as standard in the publication.

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AUTHORSHIP CONTRIBUTION

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CONFLICT OF INTEREST

None.

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