Elsevier has created a Monkeypox Information Center in response to the declared public health emergency of international concern, with free information in English on the monkeypox virus. The Monkeypox Information Center is hosted on Elsevier Connect, the company's public news and information website.

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Travel Medicine and Infectious Disease 49 (2022) 102399

Contents lists available at ScienceDirect

Travel Medicine and Infectious Disease

journal homepage: www.elsevier.com/locate/tmaid

What has been researched on monkeypox in Latin America? A brief bibliometric analysis

Dear Editor,

During the post-pandemic phase of COVID-19, several scientific societies and health institutions around the world affirmed that this public health catastrophe should encourage research in regions of the world where there are barriers to the development of basic and clinical studies [1], such as Latin America and the Caribbean. Above all, because in the coming years the world should prepare for emerging and re-emerging diseases with pandemic potential. In May 2022, the World Health Organization (WHO) reported two cases of monkeypox in the United Kingdom, without exact knowledge of epidemiological links and potential for local or national spread of this disease [2]. Over the weeks, new cases have been reported worldwide, raising concerns about the international health situation, and being alert about the behavior of new strains of this virus [3–6].

At present, there are groups and research centers that are rapidly advancing in the viral identification and sequencing to effectively control this infection and avoid another global calamity. However, it is necessary to know how much research has been done on monkeypox in the different regions of the world that have been able to advance questions about aspects of this virus. In order to know the context of Latin American research, a systematic search was designed and executed in PubMed until June 28, 2022. A bibliometric analysis was carried out based on the information available. Data on the number of published articles, number of leading and senior Latin authors, research collaboration, number of female authors, publication topic, study design, affiliations, countries, and publications according to typology were extracted. In case of international collaboration in the publication and the first author was not Latin American, it was determined for the analysis that the author with Latin American affiliation who obtained the closest location to the first author would be considered the main Latin American author.

Initially 18 items were identified. When reviewing the full text, it became evident that two did not correspond to the participation of Latin authors. Therefore, 16 publications were finally included. The first Latin American publication on monkeypox was made in 2003, and the years with the most publications on this topic were 2022 (n = 8), followed by 2021 (n = 3) (Fig. 1). The journal with the most Latin American articles published on monkeypox was Travel Medicine and Infectious Disease (n = 2). Of the total number of publications, 5 (31.25%) are reviews, 3 (18.75%) are original studies and only 8 (50%) are of other types (Table 1). When analyzing the type of methodological design of the articles, 2 of the original articles were basic science studies and 1 was an observational study. Of the reviews, only 1 systematic review. When evaluating the objective of the publication, it was found that public health (n = 5) and pathophysiology (n = 4) were the most frequent topics.

87.5% of the total number of publications are monocentric, that is, their authors come from a single institution. Regarding international collaboration, it was found that in 5 articles, 2 countries participated collaboratively, and 7 articles did not have international collaboration (43.75%). In 56.25% of the publications, there was no collaboration with high-income countries. Regarding the number of authors per article, 4 (25%) authors per article was the most frequently found, followed by 5 authors (18.75%). It was found that 31.25% of the articles had no participation of female authors, and the highest frequency was 2 female authors per article (n = 5; 31.25%). Only 5 publications reported funding for their development.

The primary author affiliation most frequently identified was the Universidad Federal do Rio de Janeiro (n = 3). The cities with the highest participation were Belo Horizonte (n = 3) and Rio de Janeiro (n = 3). The country with the highest productivity in this topic were Brazil (62.5%), followed by Argentina (12.5%) and Colombia (12.5%). Regarding the most outstanding authors, author D. Katterine Bonilla-Aldana was the lead author with the highest number of articles on monkeypox (n = 2), while Alfonso J. Rodriguez-Morales was the senior author with the highest productivity on this topic (n = 4; 25%). When searching in general, without discriminating by Latin American countries, 1012 results on monkeypox were found, which reflects that only 1.5% of the research on monkeypox is found in Latin America.

The gap in scientific production on monkeypox in Latin America, compared to the world, is evident, and this raises the following question: does Latin America know enough about monkeypox to be able to deal with an epidemic in a timely manner? There is much divergence in the Latin American scientific production on this virus and this disease, with few publications on original studies. Brazil continues to be the country of reference in medical research on this continent. In more than half of the publications, no collaboration with high-income countries was found, which may facilitate more complex studies, since molecular and genomic tools are not available in low- and middle-income countries. It was identified that there is little participation of women in these studies. However, in the last two years there has been an increase in the number of publications, which could counteract this trend, due to current policies and movements. It is necessary that this trend continues to increase, changing the priority of generating original studies that answer many questions about general aspects, preventive policies, pedagogical strategies, diagnostic and pathophysiological descriptions, epidemiological behavior, treatment, among others. It is imperative to conduct meta-research on monkeypox, in order to constantly evaluate the validity and extrapolability of the results that appear over time. Latin America must continue to push forward its initiative to break down barriers to access and production of quality knowledge [7,8]. This is a new challenge that it cannot avoid facing, and it must control and solve it in the most rational way, hand in hand with evidence-based medicine.

https://doi.org/10.1016/j.tmaid.2022.102399
Received 5 July 2022; Accepted 7 July 2022
Available online 8 July 2022

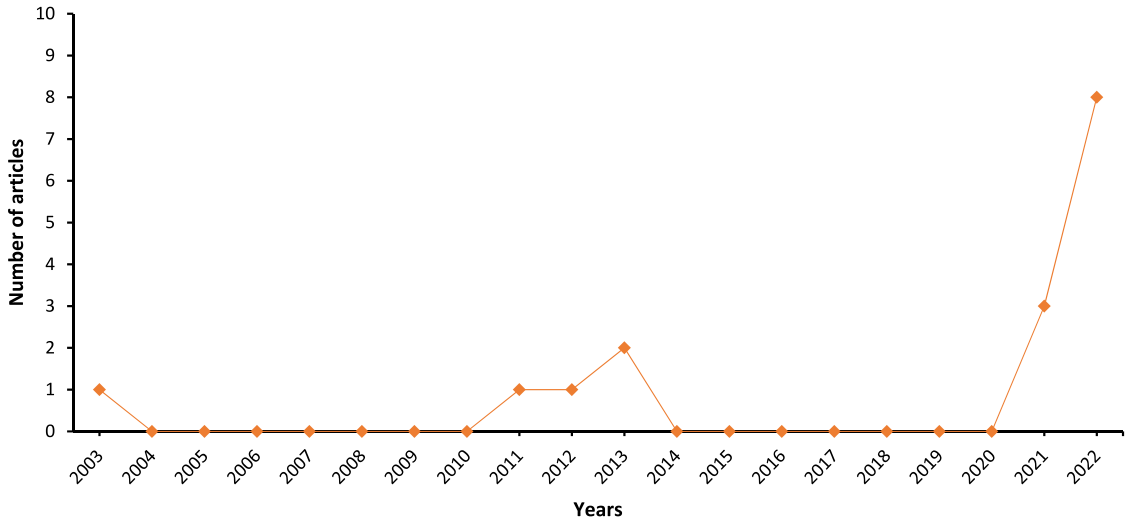

Fig. 1. Number of Latin American publications by year on monkeypox in PubMed.

Table 1
Additional information on Latin American monkeypox publications in PubMed.

Variable	% (n)
Methodological design	
Narrative Review	25% (4)
Systematic Review	6.25% (1)
Basic science study	12.5% (2)
Clinical study	6.25% (1)
Letter	25% (4)
Editorial	12.5% (2)
Forum	6.25% (1)
Rapid Communication	6.25% (1)
Topic of the publication	
Public Health	31.25% (5)
Pathophysiology	25% (4)
Epidemiology	18.75% (3)
General Aspects	18.75% (3)
Treatment	6.25% (1)
Number of contributing countries por article	
1	43.75% (7)
2	31.25% (5)
3	6.25% (1)
4	12.5% (2)
5	6.25% (1)
First-author affiliations	
Universidad Federal do Rio de Janeiro	18.75% (3)
Universidade Federal de Minas Gerais	12.5% (2)
Fundação Oswaldo Cruz	12.5% (2)
Institución Universitaria Vision de Las Americas	12.5% (2)
University of São Paulo	6.25% (1)
Instituto Aggeu Magalhães	6.25% (1)
Instituto de Infectologia Emílio Ribas	6.25% (1)
International University of Ecuador	6.25% (1)
Universidad de Buenos Aires	6.25% (1)
Universidad de San Martín de Porres	6.25% (1)
Universidad Tecnológica Nacional	6.25% (1)

Ethical approval

Not applicable.

Sources of funding

None.

Author contribution

All authors equally contributed to the analysis and writing of the manuscript.

Declaration of interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgements

None.

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