

## FORECAST OF SCIENTIFIC PRODUCTION AND DISSEMINATION RELATED TO COVID-19

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RESEARCH ARTICLE

DOI: 10.47750/jptcp.2023.30.17.07

### Abstract

A documentary review was carried out on the production and publication of research papers related to the study of the Covid-19 variable and the results of the Literature Reviews from Latin American institutions. The bibliometric analysis proposed in this document was to know the main characteristics of the volume of publications registered in the Scopus database during 2019-2022, identifying 1,258 publications. The information provided by the said platform was organized employing tables and figures categorizing the information by Year of Publication, Country of Origin, Area of Knowledge and Type of Publication. Once these characteristics had been described, a qualitative analysis was used to refer to the position of different authors concerning the proposed subject matter. Among the main findings of this research, Brazil was the Latin American country with the largest number of records in Scopus, with a total of 679 publications referring to bibliographic analysis and literature reviews on the Covid-19 variable. The area of knowledge that made the greatest contribution to the variables under study was Medicine, with 776 published documents. The type of publication most used during the above period was reviews, accounting for 50% of the total scientific production.

**Keywords:** Covid-19, Literature Review, Latin America.

### 1. Introduction

The increase and expansion of the coronavirus prompted new initiatives to generate and increase the production of unprecedented knowledge to stop the virus's effects as soon as possible. In response to this need, research publications increased, and consequently, the communication systems and scientific articles and their respective elements, such as reviews, journals, databases, and repositories, faced the enormous challenge of knowledge generated quickly.

Researchers and scientists worldwide have made innumerable contributions from their respective areas of knowledge, establishing new paradigms in different aspects of daily life, especially in health. The countless areas of health, such as Medicine, Biology and Epidemiology, are under constant observation since the world is waiting for the much-appreciated vaccine to achieve the immunity that protects the population from the COVID-19 variant. Since the beginning of the pandemic, the evolution of the coronavirus variable has been observed, which has led to the analyses arising from scientific research to be adopted as recommendations at a global level, giving the respective importance to the validation of knowledge and scientific production for the development of strategies to minimize infections, apply the appropriate, effective treatments and therefore to continue the search for a vaccine against this disease.

Therefore, the production, distribution, publication and use of the results obtained in the respective research on COVID-19 is a fundamental factor that involves researchers as the proper producers of

knowledge and scientific information systems, as well as those in charge of disseminating it. Likewise, the study from the published scientific articles focuses on applying quantitative and qualitative methods based on indicators and mathematical models that characterize its status and evolution. Thus, this paper aims to highlight the contributions of scientific dissemination systems, authors, journals, and scientific production in constructing knowledge about the coronavirus and the COVID-19 variable. For this reason, this article describes the main characteristics of the compendium of publications indexed in the Scopus database related to the Covid-19 variables and the results of the Literature Reviews from Latin American institutions, as the description of the position of specific authors affiliated with institutions, during the period from 2019 to 2022.

## 2. General Objective

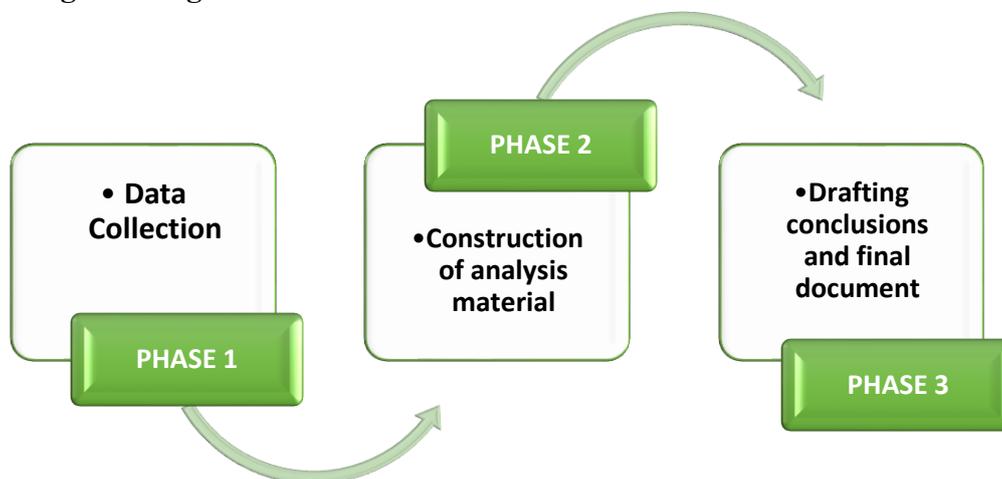
To analyze from a bibliometric and bibliographic perspective, the production of research papers on the Covid-19 variable and the results of literature reviews associated with it from 2019 to 2022 from Latin American institutions.

## 3. Methodology

Quantitative analysis of the information provided by Scopus is performed under a bibliometric approach to the scientific production related to the study of Covid-19 variables and the results of literature reviews from Latin American institutions. Also, from a qualitative perspective, examples of some research papers published in the area of the study mentioned above are analyzed from a bibliographic approach to describe the position of different authors on the proposed topic.

The search is performed through the tool provided by Scopus, and the parameters referenced in Figure 1 are established.

### 3.1 Methodological design



**Figure 1.** Methodological design

Source: Own elaboration

#### 3.1.1 Phase 1: Data Collection

The data collection was carried out using the Scopus web page search tool, by which a total of 1,258 publications were identified. For this purpose, search filters were established consisting of:

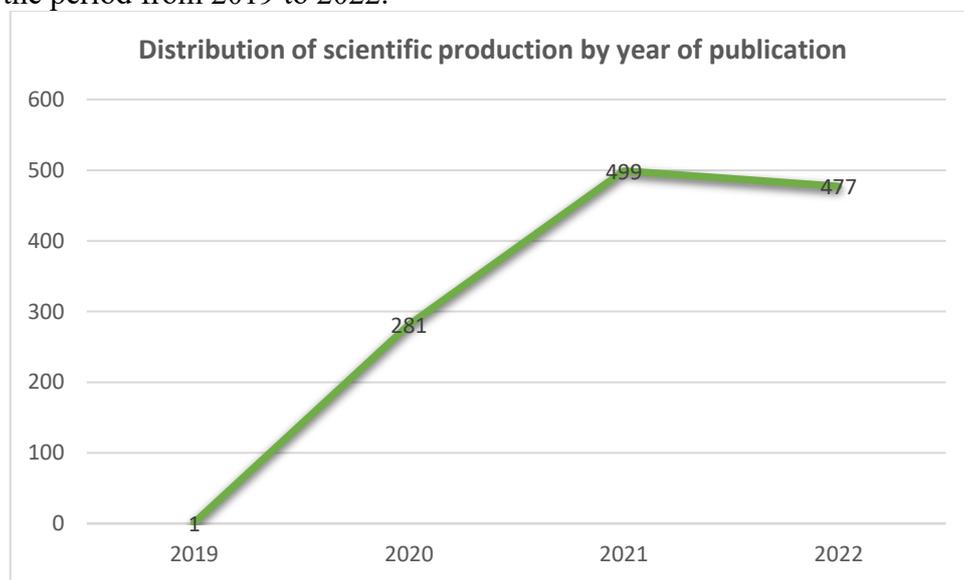
TITLE-ABS-KEY ( covid-19, AND literature AND review ) AND ( LIMIT-TO ( AFFILCOUNTRY ,“Brazil”) OR LIMIT-TO ( AFFILCOUNTRY ,“Colombia”) OR LIMIT-TO ( AFFILCOUNTRY ,“Mexico”) OR LIMIT-TO ( AFFILCOUNTRY ,“Peru”) OR LIMIT-TO ( AFFILCOUNTRY ,“Chile”) OR LIMIT-TO ( AFFILCOUNTRY ,“Ecuador”) OR LIMIT-TO ( AFFILCOUNTRY ,“Argentina”) OR LIMIT-TO ( AFFILCOUNTRY ,“Cuba”) OR LIMIT-TO ( AFFILCOUNTRY ,“Uruguay”) OR LIMIT-TO ( AFFILCOUNTRY ,“Panama”) OR LIMIT-TO ( AFFILCOUNTRY ,



Within the study of the research reported by the Scopus platform, referring to the variable variables Covid-19 and the results of the Literature Reviews coming from Latin American institutions, the object of this scientific debt that before the current COVID-19 world pandemic, the scientific production and diffusion have allowed the creation of a reliable knowledge base, in search of common purposes such as the eradication of the virus, avoid new contagions and finish new public health strategies for the immediate future. It is for this reason that through the interpretation of Figure 2, it is possible to determine as keywords of the publications reported in Scopus, COVID-19, Pandemic, Coronavirus Infection, the fundamental activity is to characterize the scientific production on COVID-19 and the due consolidation of the knowledge base of the pandemic carrying out a semantic decrease on specialized information on epistemology, pandemic and related topics that are processed and interconnected in the cloud of knowledge LOD. On the other hand, SciELO compiled a list of the most recent documents available in SciELO preprints and articles on COVID-19.

#### 4.2 Distribution of scientific production by year of publication.

Figure 3 shows how the scientific production is distributed according to the year of publication, considering the period from 2019 to 2022.



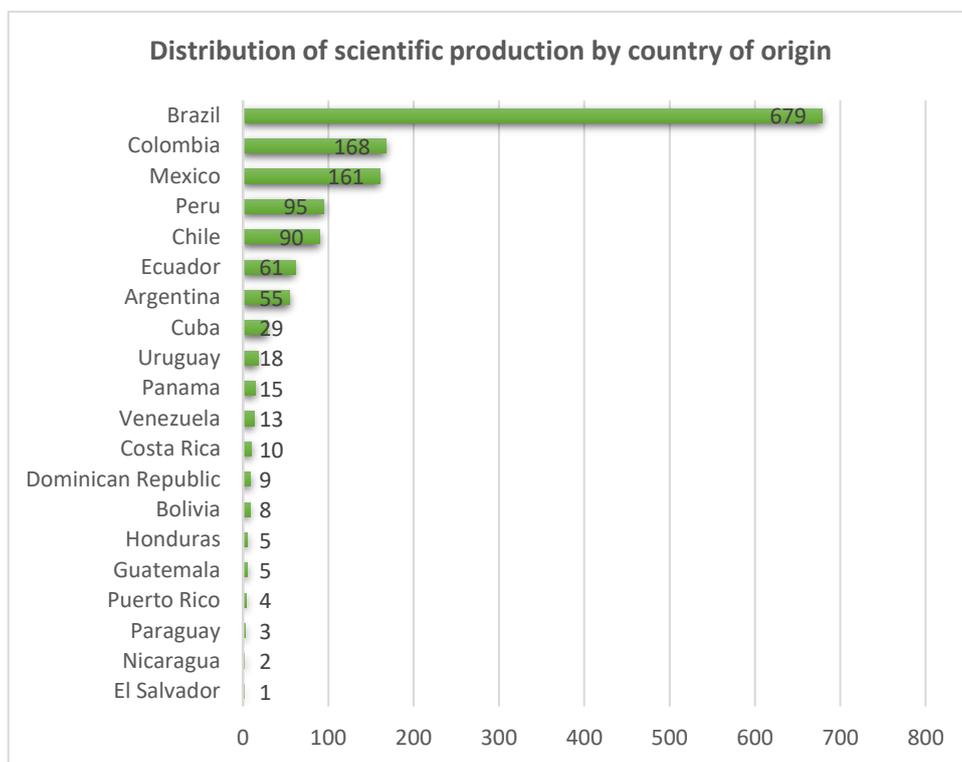
**Figure 3.** Distribution of scientific production by year of publication.  
**Source:** Own elaboration (2023); based on data provided by Scopus.

Figure 3 shows the scientific production around the Covid-19 variable and the results of the Literature Reviews coming from Latin American institutions in the period between 2019 and 2022, where an increase in production volume is evidenced in 2021, with a total of 499 publications related to the keywords, among which stands out the article entitled “Gender and social protection and health policies promoted during the COVID-19 pandemic: a review of the global scope and future challenges” (Moyano, 2022), whose objective was to answer the following questions: What is the scope of the gender approach in the literature analyzing health and social protection policies promoted during the COVID-19 pandemic? What are the challenges and recommendations for gender-sensitive policies for the post-pandemic and future crises? Methods: The study design is based on three stages: a global synthesis of evidence through a scoping review, the generation of a framework of emerging inequalities based on socio-cultural markers, and the creation of a matrix with challenges and recommendations. This scoping review analyzed 10 online databases for studies published up to April 2022 and conducted a content analysis of the extracted studies. Results: Of the 771 records identified, 67 met the inclusion criteria. Most studies had a female (52/67) as the first author. The binary model was the main approach addressed in the studies (61/67). The literature showed that closure, distancing

and other social policies did not include a gender approach and generated negative gaps related to economic instability, reproductive roles and gender-based violence.

### 4.3 Distribution of scientific production by country of origin.

Figure 4 shows how the total number of publications registered in Scopus is distributed according to the country of origin of the Latin American institutions.

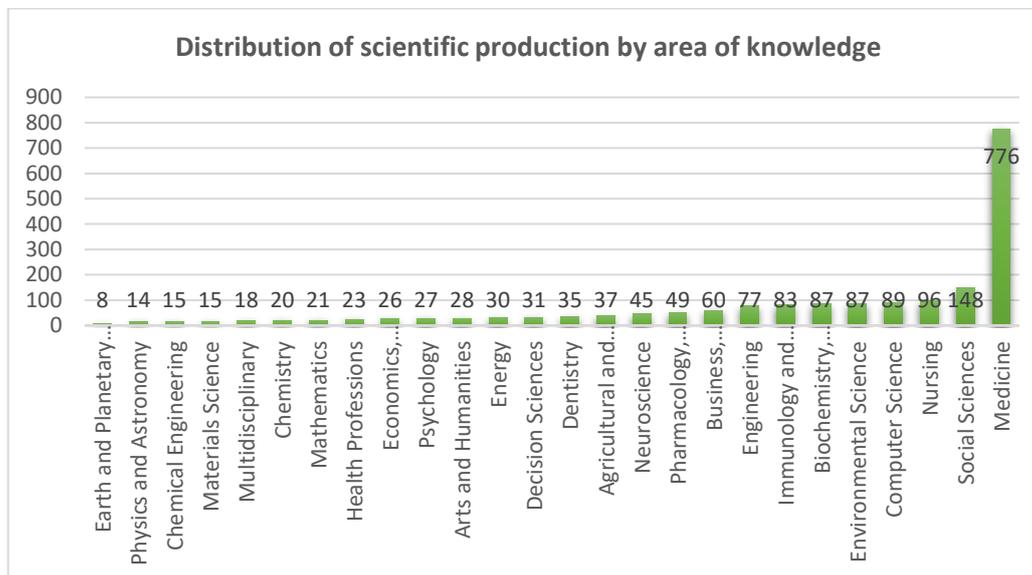


**Figure 4.** Distribution of scientific production by country of origin.  
**Source:** Own elaboration (2023); based on data provided by Scopus.

Brazil was the Latin American country with the highest number of publications registered in Scopus referring to the Covid-19 variable and the results of the Literature Reviews coming from Latin American institutions during the period 2019-2022 with a total of 679 publications, followed by Colombia with 168 registrations and Mexico with 161. Of the latter, the article entitled “Evaluation of the implementation of best governance practices by Latin American ports” stands out (Gracia, 2022), whose object of study is to provide recommendations that allow Latin American ports to achieve high-performance scores through governance practices and face the challenges imposed by the COVID-19 pandemic, fostering a more resilient port ecosystem. A three-stage methodological framework is proposed, consisting of six steps. In the first stage, semi-structured interviews were conducted with a total of 178 participants to assess the state of implementation of governance practices in 24 Latin American ports. These practices were identified from a literature review and are promoted among successful port systems worldwide. In the second stage, the relationship between governance practices in ports and their performance was analyzed to identify those governance and institutionalist strategies that are most used by the best-performing ports. Finally, the third stage provides recommendations allowing Latin American ports to achieve high-performance scores through better governance practices. The results indicate that digitalization and coordination among port logistics community stakeholders are two of the most cited governance practices in the best-performing Latin American ports. This article contributes to the theory of port governance in Latin America by empirically relating and identifying those governance practices that contribute to port performance.

#### 4.4 Distribution of scientific production by area of knowledge

Figure 5 shows the production of scientific publications distributed according to the area of knowledge through which the different research methodologies are executed.

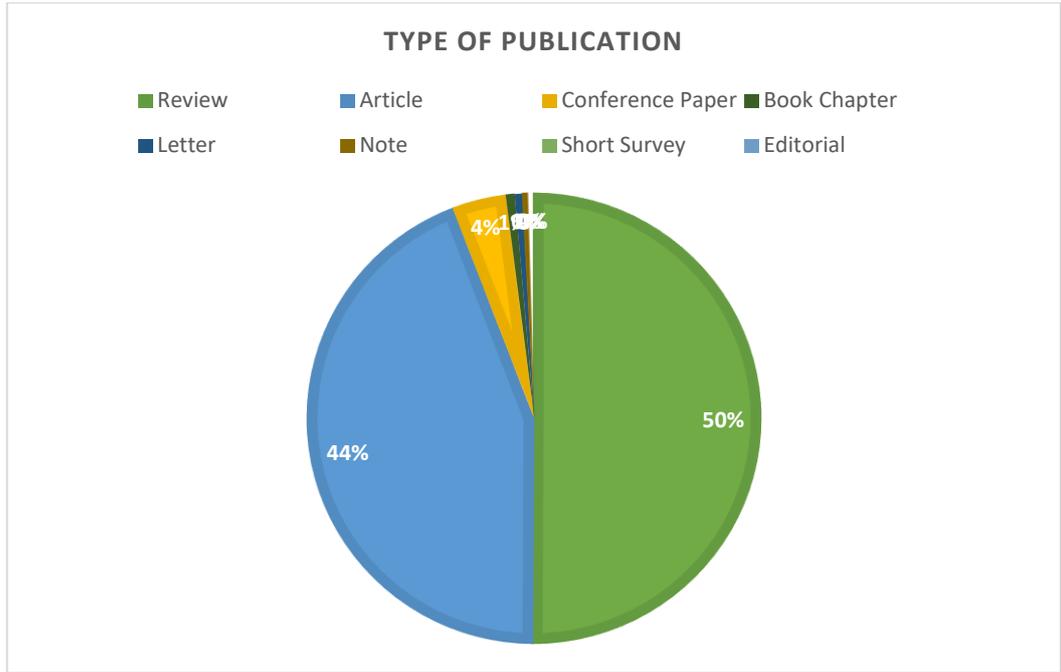


**Figure 5.** Distribution of scientific production by area of knowledge.  
**Source:** Own elaboration (2023); based on data provided by Scopus.

Medicine was the area of knowledge with the highest number of publications registered in Scopus, with a total of 776 documents that have based their methodologies on the Covid-19 variable impact and the results of the Literature Reviews from Latin American institutions. In the second place, Social Sciences with 148 documents. This can be explained thanks to the contribution and study of different branches; the article with the highest impact was registered by the area of Medicine entitled “Association between chemo-sensory dysfunctions and inflammatory biomarkers in patients with SARS-CoV-2 infection: systematic review and meta-analysis” (de Melo & Quintans). This study aimed to investigate the levels of inflammatory biomarkers in patients with COVID-19 presenting with chemo-sensory dysfunction. Methods: This review was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guideline. A systematic literature search was conducted from January 1, 2020, to May 12, 2022. Observational studies that provided data on hematologic, biochemical, infection-related indices, and cellular immunity and coagulation function in patients with COVID-19 who experienced olfactory and taste disorders were considered eligible. Effect sizes were reported as standardized mean differences (SMD) with 95% confidence intervals (CI). A negative effect size indicated that inflammatory biomarker levels were lower among patients with chemo-sensory dysfunction. Results: Eleven studies were included. Patients with chemo-sensory disturbances had lower levels of leukocytes (SMD - 0.18, 95 % CI - 0.35 to - 0.01, p = 0.04), lactate dehydrogenase (SMD - 0.45, 95 % CI - 0.82 to - 0.09, p = 0.01), IL -6 (SMD - 0.25, 95 % CI - 0.44 to - 0.06, p < 0.01) and C-reactive protein (SMD - 0.33, 95 % CI - 0.58 to - 0.08, p < 0.01) than patients without chemo-sensory disturbances. Conclusion: Patients with SARS-CoV-2 infection who have olfactory and taste disturbances have a lower inflammatory response than patients without chemo-sensory disturbances. These symptoms may indicate a more favorable clinical course for COVID-19.

#### 4.5 Type of publication

Figure 6 shows how the bibliographic production is distributed according to the author’s chosen publication type.



**Figure 6.** Type of publication  
**Source:** Own elaboration (2023); based on data provided by Scopus.

The type of publication used most frequently by Latin American researchers was Reviews; 50% of the total scientific production corresponded to this document type. In second place, Articles with 44%, and section documents with 4%. This last category includes the article “What is a post-COVID-19 syndrome? Definition and updates” (Gallegos et al., 2022). This work addresses the origin and development of post-COVID-19 syndrome, which consists of the persistence of different symptoms over time due to SARS-CoV-2 infection. Based on a narrative review of the scientific literature, a brief analysis of the new term is made, specifying the conceptual definition, the characteristic symptoms, the various implications for people’s health and the responses to specific care measures implemented. It concludes with a call to Latin America and Caribbean governments to pay attention to and monitor this public health problem.

### 5. Conclusions

Through the bibliometric analysis carried out in this study, it was possible to establish that Brazil was the country with the most significant number of published records regarding the variables Covid-19 and the results of the Literature Reviews from Latin American institutions with a total of 679 publications in the Scopus database during the period 2019-2021. Similarly, it was established that the application of theories framed in the area of Medicine was the most frequently used for the distribution and scientific support correlated with COVID-19 during the events following the pandemic. The results allowed to observe the importance of the activity of those people dedicated to research and the search for solutions and those problems that affect society in general; however, this activity would not have the same performance if those who do research did not have the necessary resources for their research and scientific production. Therefore, the relevance of having open, free and free access to the results of other research is to build knowledge networks, participate in the scientific dialogue and obtain results that benefit society. These models of direct and open access to scientific information must be endorsed and approved, supported by high-quality technology for the respective management, storage and retrieval of information is essential in the context of the COVID-19 pandemic. It is highlighted that Latin American scientific information systems such as Redalyc, AmeliCA and others have managed to implement projects to construct knowledge networks that facilitate access to information supporting the scientific community.

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