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Intensification of Coronavirus scientific literature during the First Four Months of 2021

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Intensification of Coronavirus scientific literature during the First Four Months of 2021

Abstract

For this research, the Web of Science database is being considered. This survey uncovered the contributions of various countries, research authors, and research areas, as well as the publication trend, country-specific research production, and top-cited papers in coronavirus literature.

The data set included papers on coronavirus that were downloaded between January 1, 2021, and April 30, 2021 from the Web of Science Core Collection (WOS CC). During the first four months of 2021, a total of 9905 documents were released. According to the report, the pandemic was covered by 158 nations, 60708 authors, and 13232 institutes. Overall, the United States, China, the United Kingdom, Italy, and India accounted for the majority of Coronavirus research activity on a global scale.

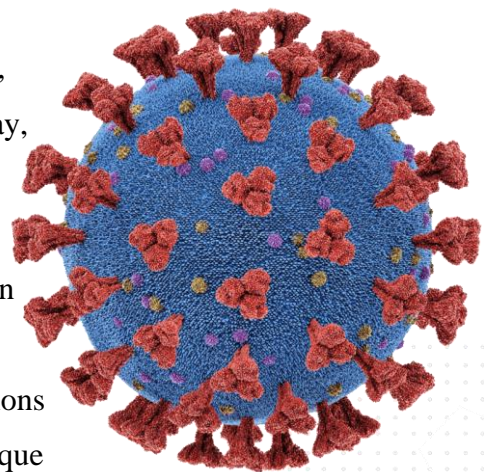
Keywords:

COVID-19; coronavirus; pandemics; virus diseases; scientometric analysis; Bibexcel

Introduction

The COVID-19 pandemic is still razing the world. The coronavirus disease has affected all practices of people, and is directly disturbing the global economy. Every day, millions of suspected cases and deaths are confirmed and announced. According to the WHO's Weekly Epidemiological Update on COVID-19, there have been over 3 209 109 deaths and 153 187 889 reported cases.

Researchers have been working to develop novel solutions that will aid in the understanding of the pandemic's unique characteristics. The aim of this paper is to conduct a scientometric analysis to look into the trends of coronavirus in the Web of Science (WOS) database during the first four months of 2021. With the aid of the bibexcel programme, 9905 papers were analysed for this. To monitor COVID-19's massive effects, lower infection rates, and improve medication, cure, and contagious prevention methods, scientific research is critical..



Objectives of the study:

The objectives of the present study are:

- To determine the total number of documents available in the Web of Science database.
- To assess the extent to which the relevant subject areas are covered.
- To know the exact number of reported document types.
- To recognise the study authors and their contributions to the research.
- To learn more about the leading countries and organisations involved in coronavirus science.
- To identify the keywords used in research papers.

Methodology:

The primary analysis of search results is taken directly from the Web of Science database, with bibliometric analysis performed using Microsoft Excel, VOSviewer, and Bibexcel. The study data was gathered on April 30th, 2021. A total of 9905 documents were discovered that were released between January and April of 2021.

Review of literature

It aids in the learning of a systematic approach to identifying research gaps from the research's historical records.

Patil, A. B., & Bachute, M. (2021) The primary analysis of search results is taken directly from the Scopus database, with some other resources such as Microsoft Excel, VOSviewer, and ScienceScape being used for bibliometric analysis. In the field of tea consistency evaluation and artificial taste perception, this survey discovered the contributions of numerous organisations, research writers, and funding sponsors. While China and India have a comparatively high number of publications worldwide, progress in publications on "artificial taste perception of tea" has not kept pace. The statistical analysis of citations given demonstrates the high quality of research use.

Duan, D., & Xia, Q. This paper examines the patterns of international cooperation by examining COVID-19-related publications from the first six months of the pandemic. Articles on COVID-19 that were indexed in the Web of Science Core Collection (WoS CC) and downloaded four times between April 1 and June 1, 2020 made up the data set.

According to the results, the United States, China, and England were the top three publishing countries, with Italy following closely behind. Within the first few months of the pandemic, this paper attempts to provide a detailed picture of scientific collaboration on COVID-19 research among countries/regions and institutes. COVID-19 was the subject of 5,827 papers written by 6,349 institutions from 128 countries/regions for the review..

Giannoudis, P. V., Chloros, G. D., & Ho, Y. S. (2021) In this paper, we conducted a bibliometric study with the aim of identifying key researchers, centres, and research patterns in this critical clinical condition over the last 30 years. The primary languages in the documents were a total of 12 languages, with English being the most common. 26,079 writers from 101 different countries contributed to the 8976 posts. This bibliometric research was conducted.. This bibliometric research uncovered data on the number of citations, publication outputs, groups, journals, organisations, and countries.

Parabhoi, L., Verma, M. K., & Kumar, M. (2020) In response to the current report, which spanned a 20-year period between 2001 and May 2020. The Scopus database included a total of 14439 documents published between 2001 and May 2020, which were published during the study period. According to the report, the United States contributed the most published literature on Coronavirus, followed by China.. On a global scale, the United States, China, Germany, the United Kingdom, Canada, and South Korea accounted for the majority of Coronavirus research activity. Although the United States led the way in terms of Coronavirus publications, China came in second.. Most of the publications on Coronavirus are journal articles and reviews, rather than conference papers, letters, notes, and book chapters, etc

Data Analysis:

Overview of Coronavirus Literature

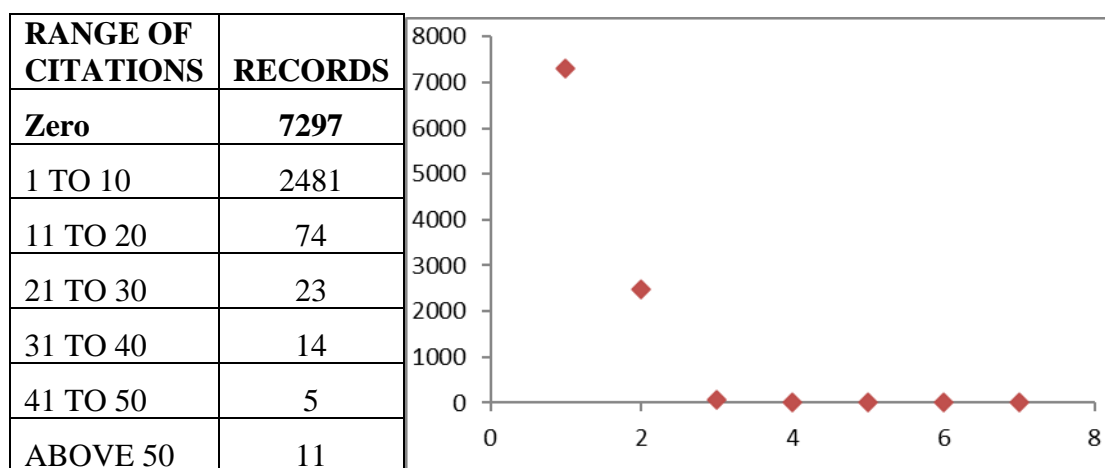
Table.1 summarise literature published between 2021 January to April.

Table.1

Description	Results
Documents	9905
Sources	2521
Document type	17
Keywords	10840
Authors	60708
Number of references	44407
Number of citations	3054
Country	158
Research areas	139
Institution	13232

Most cited publications related to Coronavirus

Range of citations

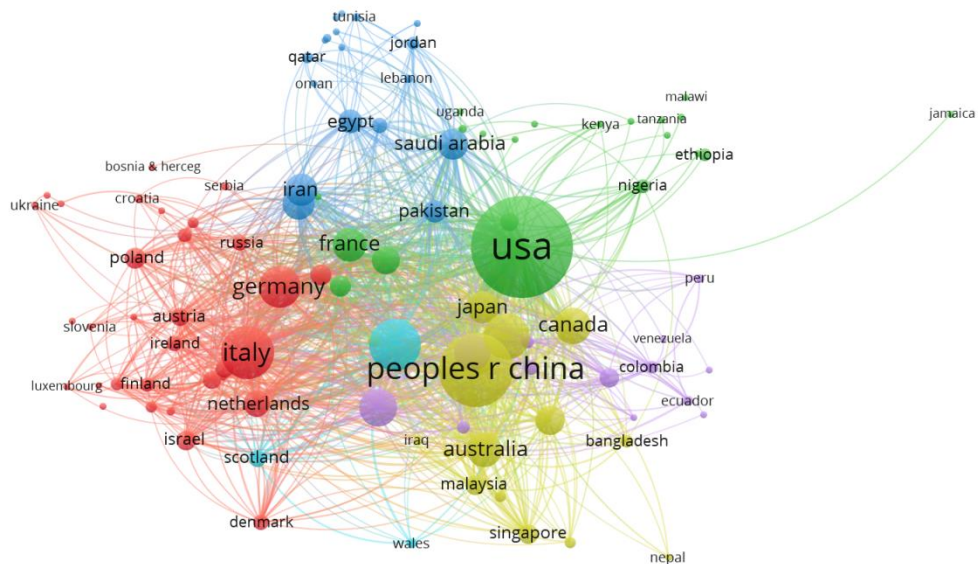


It displays the citation set for documents released from January to April of 2021. The top six most cited documents have between 100 and 1164 citations, with this one having the most. There are more than 50 citations in 11 of the documents.

Coronavirus Scientific Productivity worldwide

SL No.	Country	Records	Percentage
1	USA	2974	30.3
2	Peoples R China	1580	16.1
3	UK	846	8.6
4	Italy	827	8.4
5	India	613	6.2
6	Germany	517	5.3
7	Spain	424	4.3
8	Canada	399	4.1
9	Brazil	382	3.9
10	Australia	348	3.5

Network visualization of Co-authorship with prolific countries



The productivity of coronavirus literature around the world is depicted in the figure and table. The VOS viewer was used to construct the map. Table shows the top ten most productive countries. According to the study, the United States of America has the most publications, with 2974 (30.3%). They are followed by the Peoples Republic of China with 1580 (16.1%) and UK with 846(8.6%). Other contributing countries include the Italy, India, etc. and others, all of which have more than 300 records.

Most Relevant Journals

Journals	Records
International Journal Of Environmental Research And Public Health	173
Plos One	167
Journal Of Medical Virology	116
Scientific Reports	90
Science Of The Total Environment	87
Viruses-Basel	83
Frontiers In Psychology	82
International Journal Of Infectious Diseases	80
Frontiers In Immunology	75
Frontiers In Medicine	74

Bibexcel software was used to determine the most common journal. Only the top ten sources were taken into account. It was discovered that the majority of publications published in the International Journal Of Environmental Research And Public Health total 173 documents, with Plos One ranking second with 167 documents and Journal Of Medical Virology ranking third with 116 documents.. There are more than 100 records in these three journals.

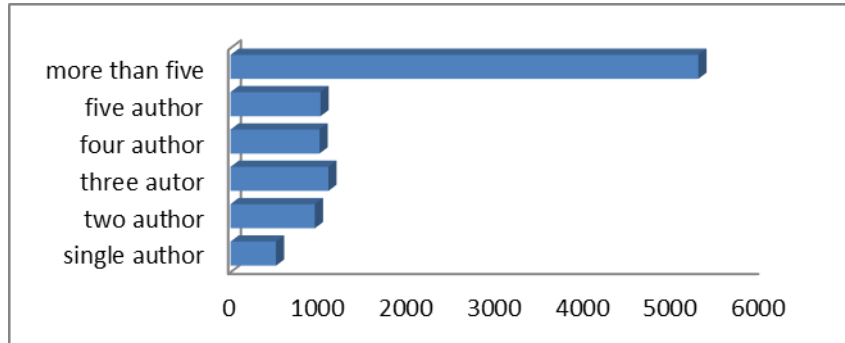
3. Most prolific Authors

SL.No	Author	Records	Percent
1	Zhang Y	60	0.6
2	Li J	48	0.5
3	Wang Y	48	0.5
4	Wang J	47	0.5
5	Zhang L	47	0.5
6	Liu Y	45	0.5
7	Li Y	44	0.4
8	Chen Y	36	0.4
9	Li L	32	0.3
10	Liu J	32	0.3

The ten most prolific Coronavirus research writers over the last four months are listed in the table above. Zhang Y, authored more than 50 papers. Li J & Wang Y are in second place with 48 records.

Authorship pattern

Author	Records
single author	516
two author	955
three author	1109
four author	1008
five author	1020
more than five	5297



The papers have been divided into sections. Single-authored articles, two-authored papers, three-authored papers, four-authored papers, five-authored papers, and papers with more than five authors are all included. An review of the data shows that there are 516 single-authored articles, 955 double-authored papers, and 1109 triple-authored papers, respectively, and 5297 papers with more than five authors.

Single VS Multi-Authors

Single VS Multi-Authors	Records	Percentage(%)
Single	516	5.2%
Multiple	9389	94.79%
Total	9905	100.00%

The table shows the outcome of a single author's contribution as well as multiple authors' contributions. According to the table-wise distribution of this authorship pattern, multiple authors have written more than single authors. Multiple authors submitted 9389 papers (94.79%), while single authors contributed 516 records (5.2 percent)..

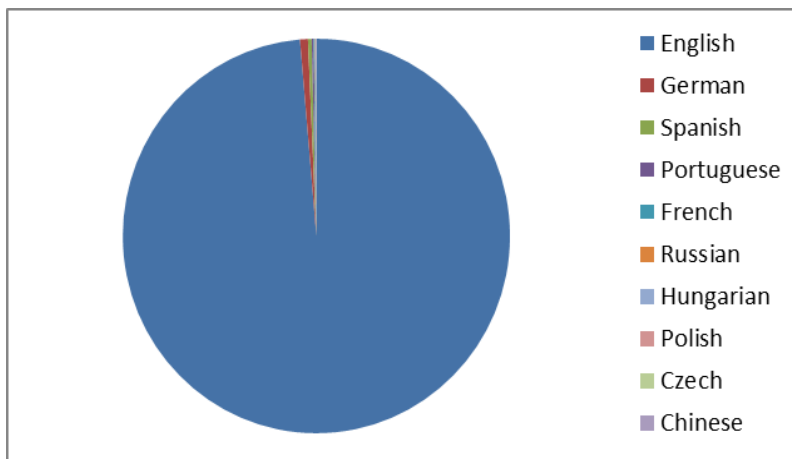
Research Area wise Analysis

Research Areas	Records
General & Internal Medicine	919
Public, Environmental & Occupational Health	795
Infectious Diseases	661
Science & Technology - Other Topics	631
Immunology	587
Pharmacology & Pharmacy	584
Environmental Sciences & Ecology	506
Biochemistry & Molecular Biology	481
Virology	402
Neurosciences & Neurology	399

To observe research trends in terms of research performance, the entire record set was divided into broad disciplines of interest. General and Internal Medicine has the most papers in the table (919) and is ranked first, while Public, Environmental, and Occupational Health is ranked second with 795 publications.

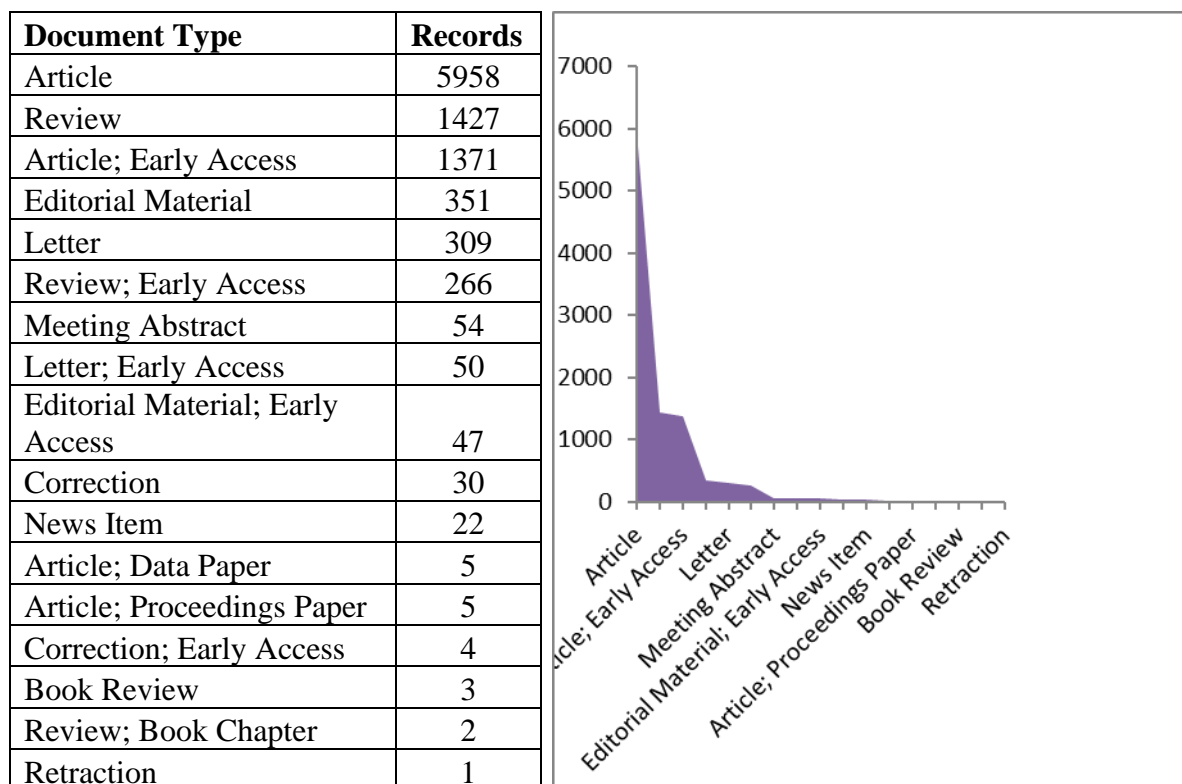
Language-wise Analysis

Language	Records
English	9771
German	65
Spanish	30
Portuguese	17
French	10
Russian	4
Hungarian	4
Polish	2
Czech	1
Chinese	1



In the field of coronavirus science, the language-wise research production revealed that the majority (9771) of contributions were made in English, accounting for 98.65% of all reports.

Documenttype



According to the table, research articles account for 5958 coronavirus scientific records, followed by review papers 1427 and others.

Conclusion

In a short period of time, a major effort has been made to study COVID-19. The researchers have released 155 documents in the first four months of 2021. It demonstrates that researchers are working diligently to find remedies and treatments for the novel covid19 or Coronavirus.. COVID-19 was the subject of 5,827 papers written by 6,349 institutions from 128 countries/regions for the review. In addition, the United States and China are the top countries for publishing research papers in the field of Coronavirus. The findings of this study are expected to help clinicians and scientists shape their research focus in the future, as well as promote international team collaboration activities, by identifying influential researchers and institutions.

References:

1. Coronavirus disease (COVID-19) pandemic(2021, May 5) Retrieved from:<https://www.who.int/emergencies/diseases/novel-coronavirus-2019>
2. Coronavirus Cases(2021, May 5) Retrieved from:
https://www.worldometers.info/coronavirus/?fbclid=IwAR35ZFiRZJ8tyBCwazX2N-k7yJjZOLDQiZSA_MsJAfdK74s8f2a_Dgx4iVk
3. Parabhoi, L., Verma, M. K., & Kumar, M. (2020). Coronavirus research output during 2001-2020: A Scientometrics Analysis.
4. Giannoudis, P. V., Chloros, G. D., & Ho, Y. S. (2021). A historical review and bibliometric analysis of research on fracture nonunion in the last three decades. *International Orthopaedics*, 1-14.
5. Duan, D., & Xia, Q. Evolution of scientific collaboration on COVID-19: A bibliometric analysis. *Learned Publishing*.
6. Patil, A. B., & Bachute, M. (2021). A Bibliometric Analysis of the Tea Quality Evaluation using Artificial Intelligence. *Library Philosophy and Practice*, 1-21.
7. Kumar, K. (2020). Mapping of PubMed Literature on Early Trends of 2019 Novel Coronavirus(COVID-19).
8. Saha, R. P., Singh, M. K., Samanta, S., Bhakta, S., Mandal, S., Bhattacharya, M., ... & Chakraborty, C. (2020). Repurposing drugs, ongoing vaccine and new therapeutic development initiatives against COVID-19. *Frontiers in Pharmacology*, 11, 1258.
9. Bhattacharya, S., & Singh, S. (2020). Visible Insights of the Invisible Pandemic: A Scientometric, Altmetric and Topic Trend Analysis. *arXiv preprint arXiv:2004.10878*.
10. Radanliev, P., De Roure, D., Walton, R., Van Kleek, M., Santos, O., Montalvo, R. M., & Maddox, L. T. (2020). What country, university or research institute, performed the best on COVID-19? Bibliometric analysis of scientific literature. *arXiv preprint arXiv:2005.10082*.