



Impact of COVID-19 Pandemic on the Number of Research and Publications-A Review

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

COVID-19 is having a major effect not only on healthcare delivery systems but also on the science and research sector. The pandemic of COVID-19 immediately closed universities as well as colleges all over the world, amid government orders to adopt social distance, which could help to flatten the transmission curve and decrease the total mortality from the pandemic. Fundamental scientific studies have been especially difficult hit as a result of statewide lockdown restrictions, whilst clinical researchers have encountered similar difficulties as a result of the cessation of medical care and a sudden return to full-time clinical tasks. The number of publications on COVID-19 has rapidly and dramatically increased. This emphasizes the importance of collaborating with

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other medical research facilities in addition to intra-institute cooperation and collaboration. One method to modify the picture of clinical research is to incorporate additional innovation into the study's design.

Keywords: COVID-19; pandemic; research; publication; review.

1. INTRODUCTION

Coronavirus pandemic (COVID-19) has ravaged the world, killing several hundred million people, closing down businesses, restricting immigration, and inflicting misery on a global scale. It has pushed healthcare systems and people to breaking point in many areas, and it will undoubtedly have a long-term impact on medical research. Prior to the COVID pandemic, virology research (including flu) represented under 2% of all biomedical exploration. In any case, the quantity of organizations and analysts that have moved their concentration to the COVID-related examination issue is astounding, maybe representing 10 to 20% of current biomedical investigation, exhibiting established researchers' phenomenal versatility. The worldwide support for COVID-19 research that has been promptly introduced is hundreds of millions of dollars. The dissemination of scientific investigation and collection of data for research has never been quicker or more streamlined. The pandemic has also pushed illness, wellness, and public health back to the center of social concerns, and it will pay off a long-term influence on government expenditure. Hence, there is a drawback to all of this positivity and attention. In beginning, the COVID-19 situation has resulted in a flood of articles. Nor are specialty journals inundated with submissions from writers who have unwittingly been given much-needed writing time, but papers on COVID have almost saturated us. We are unable expect the timeframe and possible standard for peer review will be able to remain with the increase in publication [1].

COVID-19 is having a major effect not only on healthcare delivery systems but also on the science and research sector. The typical processes of control that prominent scientific publications generally exercise concerning the submitted data and results have been pushed to their breaking point, and these limitations have even been crossed [2]. All research affiliated with the hospital that was unrelated to COVID-19 was halted immediately. The entire research team was reassigned to the centrally funded COVID-19 study. Proposal to hire additional researchers were called off, and all research collaborations

with international partners were halted. COVID-19 seems to have had a significant impact on on-field research, with trials of new medicines being mostly suspended citing concerns about the possibility of COVID-19 infection and the probability for greater severity of infections in relevant individuals [3]. Travel, social, and funding constraints have a significant impact on scientific research around the world. COVID-19 operations have been given top priority in terms of research personnel and resources. Due to travel limitations, research-related recruiting has been halted, and young researchers also may soon be out of work if their research subject is not the pandemic. Though health research agencies funded by the government around the world declare they are dedicated to sustaining the consistency and range of biomedical research, it remains to be seen how the economic downturn will affect government investment. Research funds that are based on public donations are projected to fall, and many investigators will face a considerable reduction in monetary prospects. The worldwide effects of the emergency on the economy render it tough to picture how future funding for research would be unaffected [1].

The pandemic of COVID-19 immediately closed universities as well as colleges all over the world, amid government orders to adopt social distance, which could help to flatten the transmission curve and decrease the total mortality from the epidemic. The impact on higher learning has been serious and groundbreaking, with instructive frameworks all throughout the planet reacting to the pandemic with "emergency eLearning" rules, demonstrating a quick move from actual classes to web based learning stages. The episode has featured the imperfections of the current schooling framework, just as the need for more prominent new computerized preparing for educators to adjust to the world's rapidly changing instructive air [4]. Early-career investigators and PhD scholars have been disproportionately affected because of the COVID-19 outbreak. The COVID-19 problem has also presented problems to the long-established system of publication of research, which has proven insufficient in cases

demanding quick data distribution. Fundamental scientific studies have been especially difficult hit as a result of statewide lockdown restrictions, whilst clinical researchers have encountered similar difficulties as a result of the cessation of medical care and a sudden return to full-time clinical tasks. The continuing impact of the COVID-19 outbreak on research and training programs is impossible to predict, but this global crises are expected to affect the functioning and teaching habits in the science community for coming years [5]. This will be especially detrimental to students from low-income nations, who may stand to benefit the most from international experiences. The worldwide scientific community will pay a high price for undeveloped research possibilities [6].

On COVID-19, 1430 journals published a total of 1430 articles. The British Medical Journal (BMJ) has the most papers with 252, followed by the Journal Medical Virology having about 186. The Lancet (134 articles) and the New England Journal of Medicine (NEJM) were the other top journals (99 articles). On January 17, 2020, the first article about COVID-19 was published. All previous articles were found to be irrelevant to the current pandemic. The number of publications on COVID-19 has rapidly and dramatically increased. There had been 3201 publications written on this topic in 92 days, and 6831 articles in 113 days, for a spectacular average of 34.8 and 58.89 publications per day, accordingly. Numerous publications, including each of the main ones with high impact factors, are bringing out extraordinary issues of COVID-19, and distributors are publishing them as first concerns, speeding up their release, and permitting free admittance to such articles. Despite a large number of articles, there are currently just a few high-standard research on this issue. The majority of current articles are broad narrative perspectives, guidelines, experiential case reports/series, and personal views, instead of higher-level evidence articles based on a greater proportion of these instances. The significant number of papers on COVID-19 in just such a short amount of time can be attributed to numerous factors: COVID-19 is a global pandemic that has influenced and impacted the world population. Because of the lockdown in several places, researchers have more time to publish, and it is easier to publish because most journals are inviting COVID-19-related articles and their editorial procedure has been accelerated [7].

2. SITUATION IN INDIA

Bibliometric research, which helps in assessing the structure of research articles in a particular area, has additionally been led to survey the nature of the exploration of scientific papers on COVID-19. The study's findings are consistent with current Indian scientific papers on COVID-19. As a basis of the preceding, research, some significant insights were discovered. The researchers who have released the most papers have all come from AIIMS or ICMR institutions. The majority of these authors have worked together to publish scientific papers on COVID-19 and are all from the same organizations. This emphasizes the importance of collaborating with other medical research facilities in addition to intra-institute cooperation and collaboration. It's worth noting that more than 85% of the coronavirus articles were written collaboratively. Because COVID-19 is a worldwide pandemic, interdisciplinary research is critical to combating this infectious condition. One fascinating reality is that the majority of COVID-19 publications have come from government medical research institutions. AIIMS and ICMR in New Delhi, as well as its other institutions in all other parts of India, such as the National Institute of Virology in Pune and the National Institute of Epidemiology in Tamil Nadu, have published the most on COVID-19. In terms of COVID-19 research publications, China and the United States have been far way ahead of India in terms of GDP and scientific papers per million people. In this period of global health crises, India's central and state colleges, which are on a large scale, should build their research abilities. As far as journals are concerned, the Indian Journal of Medical Research (IJMR) has given the most papers of some other journal, representing around 16% of all publications. COVID-19 has been extensively covered in this publication by the ICMR and its affiliated institutions. In India, epidemiology and its influence on diabetes, cardiac patients, the environment, and pandemic outbreaks are mostly studied, with fewer studies on clinical prognosis, pharmacological treatments, and laboratory-based studies or virology-related studies on COVID-19 virus. Although this bibliometric analysis gives a bird's-eye perspective of Indian writers' COVID-19 publication patterns, generalizing the findings of this study should be done with caution. Larger-scale publications on new coronaviruses, such as COVID-19 [8].

While researching the pandemic, the researcher should seek out opportunities that do not raise regarding the participants' risk of COVID-19 due to research procedures. Studies should aim to prompt recruitment, proper commitment to specific protocol techniques, higher participant engagement, and appropriate statistical analysis while assuring safety to avoid disproportionate statistical power loss as well as an elevated risk of bias as a result of relevant but incomplete data. Methods that allow for more extensive collection of data during the pandemic of COVID-19 are also critical for strengthening the quality of safety and efficacy evaluations [9]. Researchers could investigate approaches such as data capture by electronic means performed at home by the patient or caregiver, telemedicine, or telephone interviews to avoid disrupting intelligence collection. Brought together information checking, computerized advancements, home nursing visits, and the utilization of nearby labs instead of central research centers are instances of added methodology that might work on the legitimacy of significant result appraisals. Even if the data is inadequately obtained, it is frequently more useful than no data. The authors of the research staff should keep a patients list whose participation in the experiment has been harmed by COVID-19, as well as the features of those repercussions. Missingness insights can be used to inform changes to the suggested updated statistical analysis. All modifications to the collection of data should be reviewed and acknowledged with doctors, statisticians, operational employees, and information management groups. The researcher should describe and evaluate clinical trial data objectively, fully acknowledging both the merits of the studies and the uncertainty caused by the pandemic.

3. CONCLUSION

The studies should seek to draw conclusions that apply to the post-pandemic phase. If the COVID-19 outbreak has significantly hampered trial execution, confirmatory trials to reach desired levels of dependability may be required [10]. One method to modify the picture of clinical research is to incorporate additional innovation into the study's design. The COVID-19 outbreak has put forth the need for adaptability in clinical research, which cannot be conducted without human volunteers [9].

CONSENT

It is not applicable.

ETHICAL APPROVAL

It is not applicable.

Competing interests

Authors have declared that no competing interests exist.

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