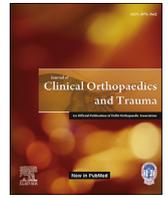




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Unprecedented surge in publications related to COVID-19 in the first three months of pandemic: A bibliometric analytic report

Srinivas B.S. Kambhampati ^{a, *}, Raju Vaishya ^{b, c}, Abhishek Vaish ^d^a Sri Dhaatri Orthopaedic, Maternity & Gynaecology Center, SKDGOC, Vijayawada, Andhra Pradesh, 531127, India^b Indraprastha Apollo Hospitals, New Delhi, India^c Editor-In-Chief, Journal of Clinical Orthopaedics & Trauma, President Arthritis Care Foundation, Past President, Indian Cartilage Society, India^d Department of Orthopedics Indraprastha Apollo Hospitals, New Delhi, India

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Coronavirus has already infected more than 3 million human beings and has consumed more than two hundred thousand lives. Apart from the social media, there has been a flurry of publications in the medical literature on the pandemic of COVID-19, within first three months of its onset.

1. Current trend of publications related to COVID-19

We set out to see the trends of publications related to this condition on the PubMed and did search on April 25, 2020 using a search strategy (SARS-Cov-2) OR (COVID-19 AND (2019:2020 [pdat])). There were a total of 6831 articles found for this search. 1802 were human studies of which 6415 were published in the English language. [chart \(1\)](#) shows publications on Covid19 according to week of the year 2020. When we analyzed the articles from the final weeks of 2019, they were not related to this current pandemic and hence were removed from analysis. Articles related

to the current outbreak only started appearing from January 17, 2020 and the number of publications increased exponentially, since then. In the week before the search was done, there were 1493 publications and the final week saw 1638 publications.

There were a total of 1430 journals which published on COVID-19. The British Medical Journal (BMJ) published a maximum of 252 articles followed by the Journal Medical Virology with 186 articles. The other leading journals were Lancet (134 articles) and NEJM (99 articles). The first COVID-19 related article was published on was on 17/1/2020.¹ All the publications before that were found not to be relevant to the current outbreak.

We searched the name of countries mentioned in titles of articles. China was mentioned the most often in 438 articles followed by Italy in 127 citations. Wuhan was mentioned in the titles of 197 articles. The earliest most affected countries were mentioned in the following order and numbers: China, Singapore, Italy, Iran – 438, 38, 127, and 49 respectively. India was the third most commonly mentioned name with 53 ahead of UK with 52 mentions.

Review articles were the most common (202) and Randomized Controlled Trials (RCTs) were the least common (4). When we searched the titles of articles for the type of study, we got the following numbers: 159, 50, 43, 41, 19, 32, 21, 4 for Review, Case

* Corresponding author.

E-mail addresses: kbssrinivas@gmail.com (S.B.S. Kambhampati), raju.vaishya@gmail.com (R. Vaishya), drabhishekvaiish@gmail.com (A. Vaish).



Chart1. Weekly publications on COVID19 using search strategy.

Report, Systematic Review, Meta-analysis, Cohort, clinical trial, case series and RCT respectively.

2. Publications since the onset of COVID-19

The medical literature has responded almost as quickly as the spread of this virus and as exponentially to spread awareness of this condition. The publication numbers on COVID-19 are rapidly and exponentially expanding. Within a period of 92 days, there were 3201 publications published on this topic and by 113 days there were 6831 articles which gives a phenomenal average of 34.8 articles and 58.89 articles per day respectively. Of all the publications, more than one-third are open access with free access to full text for readers and 2465 are available in PubMed Central Database.

35 articles were published in journals related to orthopaedics (Chart2). The Journal of Bone and Joint Surgery, (JBJS) American has published most on this topic with 11 publications. Two Indian journals Indian Journal of Orthopaedics and the Journal of Clinical Orthopaedics and Trauma appeared in the top 10 journals publishing orthopaedic related COVID articles. All the publications were made in the month of April 2020. The keywords used for search for this were ortho, bone, joint, trauma, arthro in the journal field.

PubMed is considered as one of the most reliable and widely used free search engine accessing the MEDLINE database of references and abstracts on life sciences and biomedical topics.² Although these numbers of publications in the PubMed are substantially high in such a short period for any disease, we believe that there are many more publications, in addition, which are still not published on the PubMed due to several reasons i.e., published as ahead of print and waiting to be published in a regular issue, some journals have an embargo period, some journals are still not listed on the PubMed and some of these are being published on preprint basis, which is not a peer-reviewed article but gets picked up by the media and other sources.

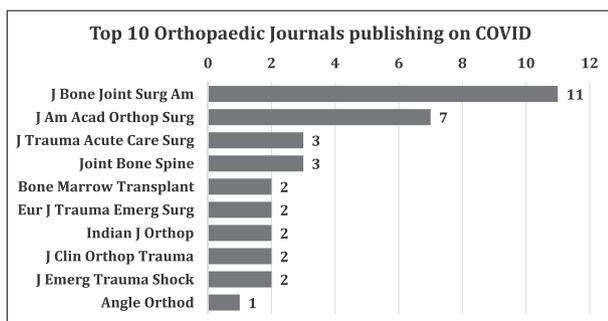


Chart 2. Top 10 Orthopaedic Journals publishing on COVID19.

3. Recent surge of publications on COVID-19

The first case was reported in Wuhan, China, in December 2, 019.³ However, WHO declared it a pandemic on 11th March 2, 020.⁴ By this time, 791 articles were published on this topic on PubMed. The first case outside China was reported in Thailand⁵ on January 13, 2020. The novel corona virus was named COVID-19 on February 11, 2020 by WHO.⁶ Apart from the medical literature and Governmental/professional directives, there has been an explosion of posts/messages in the social media on this topic.

Many journals, including all top ones with high impact factors, are bringing out special issues of COVID-19 and the publishers are publishing these as top priority and fast tracking their publication and also providing free access to these articles. Although, the number of publications is high, there are only a limited number of high-quality studies on this topic currently. Most of the present publications are broad narrative views, guidelines, anecdotal case reports/series and personal opinions, rather than higher hierarchy evidence publications like systematic reviews, meta-analysis and multicenter studies on larger number of these cases. We are optimistic that in the coming future as the scientists and researchers have more data and evidence related to this disease, higher evidence-based research articles would be published.

The high number of publications on COVID-19 in such a short time is due to several reasons: COVID-19 is a global pandemic which has affected and impacted the global population, due to lockdown at several places the researchers have more time to publish, it is easier to publish as most journals are inviting COVID-19 related articles and their editorial process is put on fast track.

From our quick review of the literature, we have observed unprecedented and exponential rates of publications related to COVID-19 pandemic, within the first three months of its onset. Only within 92 days, there were 3201 publications on the PubMed. Most medical journals seemed keen to publish articles related to it, as quickly as possible, though the hierarchy of level of evidence of these papers has not been great. The names of China and Italy figured maximally in these publications, perhaps due to earlier involvement of these countries by COVID-19.

4. Conclusion

There is an unprecedented increase in the number of publications on COVID19 since the disease started. The rate of publications of almost 59 articles per day is probably the most for any disease published so far. Majority articles appear to be of low level evidence and up to one third are free full text articles. Only 35 of these were published in orthopaedic journals. JBJS Am being the most published. The substantial number of publications on COVID-19 in the medical literature, indicate the seriousness of this disease and the quest to find solutions to combat it, through sharing personal experiences and research on this topic.

Declaration of competing interest

None.

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