



LETTER TO EDITOR

Has COVID-19 Changed Medical Publications?

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The COVID-19 pandemics took over our every-day lives with overwhelming consequences. Being this particularly manifested at people's ordinary activities and social fields ranging from world politics to stock markets, arts, education or sport, it is also true with respect to scientific publications in the area of medicine [1-3]. The number of medical publications in indexed journals has been increasing year after year, reaching, in 2019, the number of 1,268,272 indexed papers in PubMed. In the first half of 2020, the number of papers indexed in Pubmed was 699,036, which meant an increase of 8% compared to the same period of 2019 (649,766) or 2018 (646,614). If we consider that around twenty thousand of these papers are related to COVID-19, and exclude them from this sum, there was a persistent increasing tendency, quantifiable on about 30,000 more publications. In this context, it seems appropriate to hypothesize that the COVID-19 pandemic and the lockdown stimulated scientific production, both on COVID-19 and in other medical subjects.

We carried out an independent search in the electronic databases of PubMed and EMBASE using the search strategy of (Coronavirus OR COVID OR nCoV OR SARS-CoV-2). The time frame for search was 1st of January 2020 to 30th of June 2020, without language limitation nor exclusion of any type of publication. The results were transposed to a database and classified by two independent reviewers into one of 48 thematic categories. Data extraction included date, journal, authors, title, publication type and language.

We identified 26,386 papers about COVID-19. The number of papers raised exponentially over time: 29

papers published in January, 388 in February, 1,459 in March, 5,996 in April, 9,026 in May and 10,096 in June. During the same period, the total cases of reported COVID-19 cases increased all over the world, namely with 11,950 cases in January, 86,606 in February, 864,707 in March, 3,269,871 in April, 6,257,384 in May and in 10,577,756 cases as of 30th of June.

During the last six months, 2,980 indexed medical journals published papers about COVID-19. The Journals with the higher number of publications were BMJ (2.5%), Journal of Medical Virology (1.9%), Lancet (1.2%), The New England Journal of Medicine, Clinical Infectious Diseases, Dermatologic Therapy and Journal of Infection, each of these representing 1% of COVID-19 publications. When analyzing monthly data, we concluded that in the first 3 months of 2020 18.5% of COVID-19 papers were concentrated in only seven journals, specifically in BMJ (6.1%), The Lancet (4.4%), Journal of Medical Virology (3.6%), JAMA (2.2%), The New England Journal of Medicine (2.2%), ZhonghuaJie He He Hu Xi Za Zhi (The Chinese Journal of Tuberculosis and Respiratory Diseases (CJTRD)) (2.2%) and The Lancet Infectious Diseases (2.2%). On the contrary, in the second trimester (April to June) there were only three journals contributing to more than 1% of all publications, individually, namely BMJ (2.1%), Journal of Medical Virology (1.5%) and medRxiv (1.2%).

The language of 25,178 papers was the English, 439 Chinese, 380 Spanish and 228 French. In relation to general classification, 582 papers were reviews and/or meta-analysis, and 647 were case reports. The 10 most frequent clinical themes were: Treatments, drugs and vac-

cines (9.7%); spread and transmission (7.5%); intensive care and severity (5.5%); cardiovascular (5.3%); surgery (5.1%); central nervous system and pain (4.8%); mental health (4.8%); public politics and social isolation (4.7%); virus, immunology and pathogen (4.5%); and, COVID-19 tests and diagnosis (4.1%).

This is a unique opportunity in the medical field and clinical research, as it allows us to study the emergence of a completely new disease, from its presumed inexistence before December 2019 to the most mediatic of the topics in the present. The various issues covered all medical domains and specialties. In the beginning of the pandemics there was a predominance of papers on COVID-19 pathogenesis, outnumbered by disease characterization and, more recently, specific themes that explore possible relations between COVID-19 and other diseases, and broader themes including the epidemiological, social and economic aspects [4].

We would like to emphasize that one of the greatest challenges posed by this large number of publications is how to perform their critical evaluation. On the one

hand, time is crucial for data to be up-to-date and to contribute to changing practices, and on the other, this new and accelerated publication regimen is impacting abruptly on the reviewing processes of medical journals and on critical appraisal fundamentals of their final readers.

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References

1. Vaishya R, Vaish A (2020) Trends of publications during COVID-19 pandemic. *Injury* 51: 1941.
2. Rubin EJ, Baden LR, Morrissey S, Campion EW (2020) Medical journals and the 2019-nCoV outbreak. *N Engl J Med* 382: 866.
3. Eisen MB, Akhmanova A, Behrens TE, Weigel D (2020) Publishing in the time of COVID-19. *Elife* 9.
4. Bagdasarian N, Cross GB, Fisher D (2020) Rapid publications risk the integrity of science in the era of COVID-19. *BMC Med* 18: 192.