Bibliometric analysis of COVID-19 editorial materials in the beginning stage of the pandemic

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ABSTRACT

Editorial materials express the opinions of the scientific community and guides the publication foci; thus, providing insight into the dynamics of the knowledge ecosystem in a scenario that impacts innovation and public policies. The purpose of this bibliometric analysis was to identify the main characteristics of the editorial materials published at the beginning stage of the COVID-19 pandemic, published between 2019 and April 30, 2020 and indexed in the Web of Science Core Collection. A total of 537 editorial materials were written by 1,455 authors, primarily in English, and in the general and internal medicine category. The majority of these editorial materials were published in the British Medical Journal and Lancet. The United States, China, and United Kingdom had the most editorial materials, with Harvard Medical School, Imperial College, and Oxford University were the leading universities. Richard Horton was the most prolific author and the editorial material by Hui et al. (2020) was the most cited. In the initial stage of COVID-19, editorial materials reflected contingent aspects of the course of the infection at the global, regional, and national levels. In the emerging and rapidly developing crisis of COVID-19, editorial materials allow the scientific community to engage in the ongoing discussions. Analysis of editorial materials fosters the understanding of the dynamics of the knowledge ecosystem.

Keywords: COVID-19; SARS-CoV-2; Bibliometric Analysis; Web of Science Core Collection; Editorial Materials

INTRODUCTION

The COVID-19 pandemic has not only impacted our daily lives but has also collapsed various structures that regulate our functioning, such as the economy and health services. The rapid spread and advance of the coronavirus has forced immediate responses in all areas, including the dissemination of knowledge to better address the pandemic. In this context, publications related to the first case of COVID-19 represents the largest percentage of what has been published in medical and health sciences journals (López-López et al. 2020). One type of publication, although not considered a scientific article, is journal editorials.

In general, an editorial material is a paper usually written by the editor or a member of the editorial board with the purpose of highlighting or introducing some of the published articles, or simply expressing a reflection, position or opinion on that topic (Galbán-Rodríguez and Arencibia-Jorge 2014; Leeuwen et al. 2013). According to Galbán-Rodríguez and Arencibia-Jorge (2014), the traditional editorials or prologues with a neutral character, have been transformed mainly into two types: (a) one that contains complementary comments on the published research data and reinforces the existing points; and (b) the one that argues from the existing scientific knowledge and proposes completely different points. This active and non-neutral involvement of publishers or editorial teams has been increasing (Ding et al. 2016), and a current focus of discussion in the field of bibliometrics, since for some, although this type of publication does not go through the regular process of peer review, publishers can be an important source of dissemination of scientific knowledge or favor the advancement of scientific discourse by proposing hypotheses and innovative ideas (Galbán-Rodríguez and Arencibia-Jorge 2014). Although the evidence is not consistent, for other authors it could also be a strategy of impact factor manipulation by academic journals that publish many self-citations in their editorial (González and Campanario 2007). Regardless, the bibliometric analysis of editorials on a particular topic provides an approximation of possible publication patterns, including where it is published, languages of publication, type of publication, or institutions (Chiu, Huang and Ho 2004) ; and data that contribute to explore inequality in terms of scientific production (López-López 2019a; López-López 2019b). Examples of these inequalities include the work of Metz and Harzing (2012), who indicated that the representation of women as members of editorial boards is unequal in five management areas, four journal classifications, and two geographical regions; and the research of Mendonça, Pereira, and Ennes (2018) on the main academic journals of African studies, who find that less than a quarter of the editors were from Africa and that few women exercise an editorial role. Another example is the language used, as López, Moreno, and Rey (2017) point out, the choice of the language in which the findings are published has implications that are closely related to scientific policy, given its close relationship with aspects such as scientific productivity, visibility, quality, and impact of research.

Within this framework, the aim of the study was to identify the most important bibliometric benchmarks in COVID-19 editorial materials in the early phase of the pandemic. With this goal is mind, six research questions were addressed:
(a) Which are the most represented languages?
(b) Which categories of Web of Science concentrates more publications?
(c) Which are the journals with the highest impact factor?
(d) What are the most productive countries and institutions?
(e) Which are the editorial materials with the greatest impact?
(f) Who are the most productive authors?

Answering these questions will enable the authors to describe the issues addressed by the main journals and prolific authors in the editorial material related to COVID-19 since its outbreak.

METHOD

Data utilized in this study was retrieved from the Clarivate Analytics' Web of Science Core Collection, the online version of the Science Citation Index Expanded (SCI-EXPANDED). This database is widely utilized in the bibliometric analysis of various domains of knowledge (Fu,

Wang and Ho 2012; Han and Ho 2011), since it indexes the most influential journals, reaching a total of 9,394 journals in 2020 (Clarivate Analytics 2020); it also has fewer errors in the metadata, compared with other databases (Gomez-Jauregui et al. 2014).

The extraction was conducted in terms of topic (title, abstract, author keywords, and *KeyWords Plus*) from 2019 until April 30, 2020. The database was searched under the keywords "COVID-19", "COVID-2019", "2019-nCoV", "2019 novel coronavirus", "COVID19", "COVID2019", "COVD-19", "SARS CoV-2", "corona virus disease 2019", "coronavirus disease 2019", "2019 novel coronavirus disease", "novel coronavirus disease-19", "severe acute respiratory syndrome coronavirus 2", "Novel Coronavirus 2019", "Novel coronavirus infection", and "acute coronary syndromes". To access the sample, the search was limited to the document type "Editorial Material" using the automated tools available on the Web of Science.

In total, 537 editorial materials were reviewed. These records were downloaded into a spreadsheet software, and additional coding (Ho and Fu 2016) was manually performed using Microsoft Excel 2016   Affiliations originating from England, Scotland, Northern Ireland, and Wales were reclassified as being from the UK (United Kingdom) (Chiu and Ho 2005).

RESULTS

Most Represented Languages

In total, 537 COVID-19 editorial materials were found in SCI-EXPANDED using eight different languages. Table 1 indicate that the majority of editorial materials was written in English (97%) followed distantly by German (1.7%).

Table 1: Languages Used in the Publication of COVID-19 Editorial Materials

Language	TP	%	TP*	AU	APP
English	520	97	488	1,597	3.3
German	9	1.7	7	14	2.0
French	2	0.37	2	3	1.5
Spanish	2	0.37	2	2	1.0
Icelandic	1	0.19	1	1	1.0
Italian	1	0.19	1	1	1.0
Polish	1	0.19	1	1	1.0
Portuguese	1	0.19	1	5	5.0

TP: number of editorial materials; *TP**: number of editorial materials with author information; *AU*: number of authors; *APP* (*AU/TP**): number of authors (*AU*) per editorial material (*TP*).

Main Web of Science Categories

In 2018, Journal Citation Reports (JCR) indexed 9,258 journals with citation references across 178 Web of Science categories in SCI-EXPANDED. The 537 COVID-19 editorial materials were published by 262 journals among the 81 Web of Science categories in SCI-EXPANDED. The Web of Science category of general and internal medicine published the most editorial materials with 161 (30%); followed by public, environmental, and occupational health (26 editorial materials; 4.8%); infectious diseases (24 editorial

materials; 4.5%); and radiology, nuclear medicine, and medical imaging (22 editorial materials; 4.1%).

Highest Impact Factor Journals

Data analysis revealed that four journals, published 10 or more COVID-19 editorial materials. These top performing journals were *BMJ-British Medical Journal* (IF_{2018} = 27.604) with 59 editorial materials (11%); *Lancet* (IF_{2018} = 59.102) with 51 editorial materials (9.5%); *Journal of Medical Virology* (IF_{2018} = 59.102) with 11 editorial materials (2.0%), and *New England Journal of Medicine* (IF_{2018} = 70.670) with 10 editorial materials (1.9%). *New England Journal of Medicine* and *Lancet* were the top two journals on impact factor.

BMJ-British Medical Journal editorial materials focused primarily on risk factors for severe disease and death (Jordan, Adab, and Cheng 2020); digital health strategies implementation (Greenhalgh, Koh and Car 2020); aspects related to countries (Carinci 2020), regions (Bhutta, Buddha and Ramanan 2020) and global response of doctors and health systems to COVID-19 (Hopkins et al. 2020); as well as issues related to physicians and health workers including access to protective equipment (Sayburn 2020); mental health (Greenberg et al. 2020) and their family impact (Kamerow 2020).

Lancet editorial materials also addressed issues related to countries (Chen et al. 2020), continents (Nkengasong and Mankoula 2020) and worldwide (Jacobsen 2020); as well aspects that impact medical work, such as clinical course and mortality of severe COVID-19 (Weiss and Murdoch 2020). The health situation of migrants (Daniels 2020), gender disparities (The Lancet 2020a), and sexual and reproductive health in the global COVID-19 response (Hall et al. 2020) were also discussed.

Most Productive Countries

In order to compare publication performance of countries and institutions, Chuang, Wang and Ho (2011)'s proposed five publication indicators were used in the analysis: total number of publications (*TP*), independent publications (*IP*), collaborative publications (*CP*), first-author publications (*FP*), and corresponding-author publications (*RP*). Of the total editorial materials reviewed, 428 (80%) had author affiliations from 63 countries. From the 428 editorial materials, 315 (74%) were single-country editorial materials from 33 countries and 113 (26%) were international collaborative editorial materials from 56 countries. The top 10 most productive countries are listed in Table 2 along with the five publication indicators.

Four European countries, three Asian countries, two American countries, and one Oceania country were ranked on the top 10 of editorial materials. There were no African countries in the top 10. The most productive African country was South Africa, which published 10 editorial materials and ranked 12th. United States ranked top in three publication indicators with *TP* of 126 editorial materials (29%), *IP* of 72 editorial materials (23% of 315 country independent editorial materials); and *CP* of 54 editorial materials (48% of 113 internationally collaborative editorial materials). Similarly, China also ranked top in three publication indicators with *IP* of 72 editorial materials (23% of 315 country independent editorial materials), *FP* of 100 editorial materials (23% of 428 first-author editorial materials), and *RP* of 96 editorial materials (22% of 428 corresponding-author editorial materials). It has been reported that editorial materials on COVID-19 has been published at a higher rate than the beginning four months of the SARS outbreak in 2003 (Chiu, Huang and Ho 2004). The dominance of COVID-19 editorial materials by China was not surprising

considering the COVID-19 outbreak originated from China (Huang et al. 2020; Cohen 2020). It is clear that China focused more on COVID-19 research after the outbreak in 2019.

Table 2. The Top 10 Most Productive Countries for COVID-19 Editorial Materials in SCI-EXPANDED.

Country	TP	TPR (%)	SPR (%)	CPR (%)	FPR (%)	RPR (%)
USA	126	1 (29)	1 (23)	1 (48)	2 (21)	2 (21)
China	116	2 (27)	1 (23)	2 (39)	1 (23)	1 (22)
UK	82	3 (19)	3 (12)	2 (39)	3 (12)	3 (13)
Italy	48	4 (11)	4 (9.2)	5 (17)	4 (8.4)	4 (7.9)
Australia	30	5 (7.0)	8 (2.9)	4 (19)	6 (3.3)	5 (3.7)
Germany	25	6 (5.8)	6 (3.5)	7 (12)	5 (4.0)	6 (3.5)
Switzerland	22	7 (5.1)	6 (3.5)	8 (10)	7 (3.0)	7 (3.0)
Canada	21	8 (4.9)	12 (1.3)	6 (15)	9 (2.3)	9 (2.3)
Singapore	17	9 (4.0)	10 (1.9)	8 (10)	10 (2.1)	10 (2.1)
South Korea	17	9 (4.0)	5 (3.8)	15 (4.4)	7 (3.0)	7 (3.0)

TP: total number of editorial materials; *TPR* (%): rank of total number of editorial materials and percentage; *SPR* (%): rank of single country editorial materials and percentage in all single country editorial materials; *CPR* (%): rank of internationally collaborative editorial materials and percentage in all internationally collaborative editorial materials; *FPR* (%): rank of first-author editorial materials and percentage in all first-author editorial materials; *RPR* (%): rank of corresponding-author editorial materials and percentage in all corresponding-author editorial materials.

Most Productive Institutions

A total of 175 COVID-19 editorial materials (41% of the 428 editorial materials) were single institution editorial materials (*SP*) and 253 (59%) were inter-institutionally collaborative editorial materials (*CP*). Table 3 shows the top 12 most productive institutions with seven or more editorial materials.

Among these 12 institutions, six institutions were located in China, four in the UK, and two in USA. Harvard Medical School in USA and Imperial College London in the UK published the most, each with 11 editorial materials respectively. Harvard Medical School also published the most internationally collaborative editorial materials (11, 4.3%). University of Oxford published the most first- and corresponding-author editorial materials respectively (7, 1.6%; and 8, 1.9%, respectively). University of Hong Kong published the most single institute editorial materials (4, 2.3%).

Table 3. The Top 20 Productive Institutes for COVID-19 Editorial Materials in SCI-EXPANDED

Institute	TP	TPR (%)	SPR (%)	CPR (%)	FPR (%)	RPR (%)
Harvard Medical School, USA	11	1 (2.6)	N/A	1 (4.3)	4 (0.93)	6 (0.70)
Imperial College London, UK	11	1 (2.6)	6 (1.1)	2 (3.6)	2 (1.4)	2 (1.6)
University of Oxford, UK	10	3 (2.3)	2 (1.7)	5 (2.8)	1 (1.6)	1 (1.9)
Capital Medical University, China	8	4 (1.9)	N/A	3 (3.2)	22 (0.47)	59 (0.23)
London School of Hygiene & Tropical Medicine, UK	8	4 (1.9)	21 (0.57)	5 (2.8)	22 (0.47)	59 (0.23)
University College London, UK	8	4 (1.9)	N/A	3 (3.2)	N/A	N/A
Zhejiang University, China	8	4 (1.9)	2 (1.7)	14 (2.0)	4 (0.93)	3 (1.4)
Chinese Academy of Medical Sciences, China	7	8 (1.6)	N/A	5 (2.8)	7 (0.70)	19 (0.47)
Emory University, USA	7	8 (1.6)	N/A	5 (2.8)	22 (0.47)	19 (0.47)
Fudan University, China	7	8 (1.6)	21 (0.57)	9 (2.4)	2 (1.4)	6 (0.70)
Huazhong University of Science and Technology, China	7	8 (1.6)	21 (0.57)	9 (2.4)	22 (0.47)	19 (0.47)
University of Hong Kong, China	7	8 (1.6)	1 (2.3)	37 (1.2)	4 (0.93)	4 (0.93)

TP: total number of editorial materials; *TPR* (%): rank of total number of editorial materials and percentage; *SPR* (%): rank of single institute editorial materials and percentage in all single institute editorial materials; *CPR* (%): rank of inter-institutionally collaborative editorial materials and percentage in all inter-institutionally collaborative editorial materials; *FPR* (%): rank of first-author editorial materials and percentage in all first-author editorial materials; *RPR* (%): rank of corresponding-author editorial materials and percentage in all corresponding-author editorial materials; N/A: not available.

Top Cited COVID-19 Editorial Materials

In total, 503 COVID-19 editorial materials with author information in SCI-EXPANDED were published by 1,455 authors. The Top 18 cited editorial materials with total citations of 10 or more (data updated on April 30, 2020) are listed in Table 4.

Most Productive Authors

Richard Horton. From those, Richard Horton published the highest number, seven editorial materials, all of them in *The Lancet*. Richard Horton has been the Editor-in-Chief of *The Lancet* since 1995 (Horton 2010). Since January, the journal has published more than five articles focusing on the clinical account of patients who were infected in Wuhan (Knight 2020). Horton's first editorial material, released in February 2020 discussed the accounts of Chinese residents during the quarantine and challenged the medical community to rethink the consequences of the pandemic, in particular, the need to focus on the wellbeing of all Chinese citizens regardless if they contracted COVID or not (Horton 2020a).

In March 2020, Horton published two additional editorials in which he criticized the response of the British government of the pandemic. In the first editorial, published on March 21, Horton argued against the concept of herd immunity and challenged the government to focus on saving lives (Horton 2020b). In another editorial material published on March 28, Horton argued that the world was ill-prepared to address the pandemic and criticized the British government for failing to protect the medical staff due to the lack of protective equipment (PPE) and a sound strategy to test, isolate, and contract trace (Horton 2020c). Since then, Horton has become "one of the sharpest critics

of the public-health response to the pandemic in Britain, the United States, and other nations whose governments have failed their populations" (Knight 2020, p.1).

The last two editorial materials produced by Horton included in this analysis, were published on April 4 and 11 2020 respectively. One was a call for papers, which sought out interdisciplinary research addressing the economic, political, and social impact of the COVID-19 pandemic (Brown and Horton 2020). Finally, the April 11th editorial material, written at the peak of the pandemic, addressed the public health crisis and the political fallout of being ill-prepared to respond to such tragedy. Horton (2020d) pointed out that "the focus of the political debate about coronavirus disease 2019 (COVID-19) has so far been almost exclusively about the public health dimensions of this pandemic. But at the bedside there is another story, one that has so far been largely hidden—a story of terrible suffering, distress, and utter bewilderment" (Horton 2020d, p. 1178).

Table 4: Top 18 COVID-19 Editorial Materials with $TC \geq 10$

TC	Editorial material title / Journal Title	Authors (year)
61	The continuing 2019-nCoV epidemic threat of novel coronaviruses to global health: The latest 2019 novel coronavirus outbreak in Wuhan, China / *International Journal of Infectious Diseases*	Hui et al. (2020)
40	A novel coronavirus emerging in China: Key questions for impact assessment / *New England Journal of Medicine*	Munster et al. (2020)
33	Clinical evidence does not support corticosteroid treatment for 2019-nCoV lung injury / *The Lancet*	Russell, Millar and Baillie (2020)
29	Another decade, another coronavirus / *New England Journal of Medicine*	Perlman (2020)
26	Cancer patients in SARS-CoV-2 infection: a nationwide analysis in China / *The Lancet Oncology*	Liang et al. (2020)
21	CT imaging of the 2019 novel coronavirus (2019-nCoV) pneumonia / *Radiology*	Lei et al. (2020)
17	The extent of transmission of novel coronavirus in Wuhan, China, 2020 / *Journal of Clinical Medicine*	Nishiura et al. (2020)
17	Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed / *The Lancet Psychiatry*	Xiang et al. (2020)
16	Emerging understandings of 2019-nCoV /*T he Lancet*	The Lancet (2020b)
15	Novel Wuhan (2019-nCoV) coronavirus / *American Journal of Respiratory and Critical Care Medicine*	Carlos et al. (2020)
15	Genome composition and divergence of the novel coronavirus (2019-nCoV) originating in China / *Cell Host and Microbe*	Wu et al. (2020)
15	Therapeutic options for the 2019 novel coronavirus (2019-nCoV) / *Nature Reviews*	Li and De Clercq (2020)
14	How will country-based mitigation measures influence the course of the COVID-19 epidemic / *The Lancet*	Anderson et al. (2020)
13	COVID-19 and the cardiovascular system / *Nature Reviews Cardiology*	Zheng et al. (2020)
12	Chest CT findings in 2019 novel coronavirus (2019-nCoV) infections from Wuhan, China: Key points for the radiologist/*Radiology*	Kanne (2020)
11	COVID-19: What is next for public health / *The Lancet*	Heymann and Shindo (2020)
11	The COVID-19 epidemic / *Tropical Medicine and International Health*	Velavan and Meyer (2020)
10	Enteric involvement of coronaviruses: Is faecal-oral transmission of SARS-CoV-2 possible / *The Lancet Gastroenterology & Hepatology*	Yeo, Kaushal and Yeo (2020)

TC: total number of citations from Web of Science Core Collection since publication to April 30, 2020.

Giuseppe Ippolito. Following Horton's work, Giuseppe Ippolito has published five editorial materials addressing the COVID-19 pandemic. Ippolito is the Scientific Director of the National Institute for Infectious Diseases (INMI) "Lazzaro Spallanzani" in Rome and since, 2009 the Director of the WHO Collaborating Center for clinical care, diagnosis, response and training on Highly Infectious Diseases at INMI (see https://orcid.org/0000-0002-1076-2979). The first editorial material reviewed, published in the *International Journal of Infectious Diseases,* was a collaboration with 11 physicians from around the globe addressing the COVID-19 outbreak in Wuhan and the response of the Chinese government to contain the virus (Hui et al. 2020). The second editorial material reviewed, was published in February in *The Lancet,* focused on the media coverage of the pandemic and the challenges associated with inaccurate sources of information (Ippolito et al. 2020).

In March 2020, Ippolito produced his third editorial material with Shi and colleagues (Shi et al. 2020). In this particular piece the authors discussed the perspective on immune perspectives on the COVID-19, primarily focusing on why certain people develop severe complications while others do not by advocating for a two-phase immune response. Ippolito's fourth editorial material was published in April in *The Lancet*, this publication was a collaboration with eight colleagues from the WHO Novel Coronavirus-19 Mass Gatherings Expert Group. This article addressed the impact of mass gathering on the spread of the virus and the political and public health dilemmas they faced while developing these guidelines (McCloskey et al. 2020). Lastly, the last article reviewed was a commentary published in *Journal of Medical Virology* discussing the origin of the first two COVID-19 infections in Italy, a Chinese couple who were visiting the country as tourists (Carletti et al. 2020).

Verónica Schiariti. Verónica Schiariti is a Developmental Pediatrician at the University of Victoria, British Colombia, Canada.. She has published four editorial materials as a single author in the *Developmental Medicine and Child Neurology* journal. These editorial materials are versions of the same material, who has been published in English, Spanish, Chinese, and Polish. This particular piece addressed the human rights of children with disabilities during health emergencies and the challenges posed by the COVID-19 pandemic, discussing the ethical and public health dilemmas posed by the pandemic, in particular, how to keep the public informed and safe. According to the author, "In time of crises, including warfare and natural disasters, children with disabilities face additional challenges as a result of their functional limitations; but most importantly, the many barriers that society throws in their way" (Schiariti 2020, p. 661). As such Schiariti, highlighted the role of prevention in ensuring every individual will have the access to care regardless their condition.

DISCUSSION

The analysis of COVID-19 editorial materials is relevant considering they can contribute to innovation and public policies (Galbán-Rodríguez and Arencibia-Jorge 2014). Since the beginning of the pandemic, 537 editorial materials have been published, mostly, in English and in the general and internal medicine category, confirming the dominance in medical publications that has been previously observed (Garfield 1987).

The United States concentrates the largest number of published editorial materials, ratifying its leadership in the production of health-related material (Galetsi and Katsaliaki 2020) and, in particular, COVID (Ram 2020). Three of the four most productive countries

(United States, United Kingdom, and Italy) belong to the G7 member countries (USA, Canada, France, Germany, Italy, Japan, and the United Kingdom); and China, as part of the BRIC countries (Brazil, Russia, India, and China), are often widely represented in scientific production (Yang et al. 2012). In this case, this may be due not only to the advances that these countries present in science and technology, but because the United States is the nation most affected by the pandemic and China is the one that experimented the outbreak of COVID-19 (World Health Organization 2020).

The most productive institutions are Harvard Medical School (USA), Imperial College London (UK), and the University of Oxford (UK). According to the Global Ranking of Academic Subjects (GRAS) (http://www.shanghairanking.com) all three are among the top 25 medical universities in the world, showing interest in publishing material by authors affiliated with the world's most prestigious institutions.

The topics addressed by the COVID-19 editorial materials were diverse and covered a wide range of issues related to the course of the pandemic, medical response, and to the personal impact of this emergency on health workers. Editorial materials are inevitably colored by the appreciations of those who write them, whether they are assigned by the journal itself, by the editor, or by invitation. One of the limitations of their analysis is the lack of keywords that could help to clarify the way in which authors labeled the documents; thus, this study can be complemented and expanded with a content analysis of these publications. Furthermore, editorial materials have a logic of analysis very different from that of scientific articles and point mainly to the political issues or editorial strategies. In this regard, it is necessary to consider that their publication could generate a generalized manipulation of the impact factor by journals that publish large amounts of editorial materials (Campanario and González 2006; González and Campanario 2007). However, it is also necessary to highlight that in the face of an emerging and rapidly developing crisis situation, such as that of COVID-19, editorial materials are an important source of scientific content that constitutes an instrument of diffusion and reflection that allows the scientific world to participate in the most relevant debates of the present time and to contribute to the ecosystem of knowledge (López-López 2019a). In this regard, editorial material can not only be a source of guidance for researchers, but also to guide the searches of users of knowledge in training and those who conduct science journalism by increasing access to the most controversial discussions of what is published. Ultimately, the editorial materials facilitate the social appropriation of knowledge.

CONCLUSION

The bibliometric analysis of COVID-19's editorial materials reveals that they were published mostly in English and in the category of general and internal medicine. A total of 1,455 authors, with affiliations in 63 countries, wrote the editorial materials mainly as inter-institutional collaborations. The United States and China were the main contributors. Harvard Medical School (USA), Imperial College London (UK) and the University of Oxford (UK) are the main institutions of affiliation. *BMJ-British Medical Journal*, and *Lancet* are the most relevant journals and exceed 50 published materials, accounting for more than 20 percent of the total production. The most frequently cited editorial material with 61 citations was: *The continuing 2019-nCoV epidemic threat of novel coronaviruses to global health: The latest 2019 novel coronavirus outbreak in Wuhan, China* (Hui et al. 2020). Richard Horton, Giuseppe Ippolito, and Verónica Schiariti were the most prolific authors of editorial materials on COVID-19. The main issues addressed in the beginning stage to the

COVID-19 reflected contingent aspects of the course of the infection at the global, regional and national levels; as important aspects of medical work, as well as mitigating the personal impact on health workers. It will be necessary to wait for the course of this pandemic to establish whether the results of this study indicate a trend in published material in the face of this global crisis.

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