

# Analysis of COVID-19 publications in the *Indian Journal of Ophthalmology* during two years of the pandemic and their impact on ophthalmic literature

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**Purpose:** To perform a comprehensive analysis of COVID-19 publications published in the *Indian Journal of Ophthalmology* (IJO) during the two years of the pandemic and to study their impact on ophthalmic literature.

**Methods:** A retrospective analysis was performed of all expedited COVID-19 articles published in IJO from April 2020 to March 2022. The data was obtained from the official website of IJO, editor IJO monthly emails, and PubMed database. The data was then extracted as XML into Microsoft Access for scientometric analysis. The expedited articles were segregated into different categories: original, review, case report/series, letter to the editor, commentary, current ophthalmology, consensus criteria, perspective, innovations, ophthalmic images, photoessays, research methodology, and surgical techniques. The monthly data was analyzed and COVID-19 articles were assessed for subspecialty-wise distribution, number of citations, monthly growth rate, and their impact on ophthalmic literature. **Results:** A total of 431 COVID-19 related articles were published during the study period. The majority of the articles were letters to the editor (158, 36.65%) followed by original articles (97, 22.50%), and commentaries (53, 12.29%). The least were perspectives and ophthalmic images (2, 0.46%) each followed by consensus criteria (1, 0.23%). The maximum publications came in July 2020 (44, 10.20%) followed by December 2021 (37, 8.58%) and October 2021 (36, 8.35%), and the least were in April 2020 (1, 0.23%). Considering subspecialty, a majority of the articles were related to general ophthalmology (156, 36.19%), and the least was in oncology (2, 0.46%). The maximum number of citations were attracted by original articles (97, 1146 (11.81)), which were approximately 1.5 times higher than the letters to the editor (158, 743 (4.70)) and 3 times higher than review articles (9, 387 (43)). Among specialties, the maximum number of citations were gathered by general ophthalmology (156, 1320 (8.46)) followed by oculoplasty (36, 592 (16.44)) due to the concurrent mucormycosis epidemic. **Conclusion:** IJO opened a window of opportunity for authors by publishing quality expedited articles. Evidence-based orbital mucormycosis and general ophthalmology publications gathered most of the attention due to their heterogeneous presentation. The peak of the first wave (June–July 2020) and the October and December 2021 issues had maximum number of COVID-19 articles.

**Key words:** COVID-19, epidemic, general ophthalmology, mucormycosis, pandemic

The start of 2020 saw the emergence of an unexpected, rapidly fatal infection in the form of coronavirus disease or the COVID-19 viral infection caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).<sup>[1]</sup> The first case of COVID-19 was reported from Wuhan, Hubei province of China, which created a hue and cry situation globally.<sup>[2]</sup> It has been 28 months since then, fighting for life and death. Various measures have been implemented to curb the pandemic in the form of hand hygiene, proper and regular mask application, use of personal protective equipment (PPE), and rapid and aggressive mass vaccination.<sup>[3–5]</sup> The second wave of the pandemic from March to June 2021 also saw the emergence of

the mucormycosis epidemic in India.<sup>[6]</sup> The pandemic created a huge negative impact on the global economy, healthcare, education, and industries.<sup>[7,8]</sup> Simultaneously, it also opened up a window of opportunity for innovations, education, publication, and research.<sup>[9,10]</sup> There was an exponential surge in rapid article submission, processing, and publications across all the reported journals, including ophthalmology journals.<sup>[9,10]</sup> There were time and space constraints in almost all journals due to nearly three times the submitted articles compared to normal.<sup>[11]</sup> This gave birth to the concept of “expedited publications.” An expedited publication is a fast-track peer-reviewed publication, which aims at reviewing, publishing, and bringing the article to its readers at a faster

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rate without compromising the scientific content and quality.<sup>[12]</sup> Some of the quality research articles sometimes need prioritization due to their impact on scientific literature and public health. The usual trend is peer review within three weeks and final publication within four weeks from the date of acceptance.<sup>[13]</sup> The unexpected response of scientists and researchers to COVID-19 resulted in a considerable volume of research papers being submitted to the publication pipeline at an extraordinary speed.<sup>[14]</sup> Some of the journals had a median time of six days from receipt to acceptance of articles.<sup>[14]</sup> Although the COVID-19 pandemic invited emergency accelerated publishing, meticulous regulations are required to maintain the scientific integrity of the literature being published.<sup>[15]</sup> Palayew *et al.*<sup>[14]</sup> analyzed the number of articles submitted and their time of acceptance during the initial 12 weeks after the COVID-19 pandemic was declared a public health emergency on 30 January 2020. They showed that on average, 367 COVID-19 articles were published per week, and the average time from submission to acceptance was only six days. Horbach<sup>[16]</sup> analyzed 14 medical journals with 669 articles and concluded that the time between submission and COVID-19 publication decreased on an average by 49% or 57 days; but the same was not true for non-COVID-19 articles. The *Indian Journal of Ophthalmology* (IJO) was not far behind in adapting to publish the expedited high-quality scientific articles with everlasting impact. Recently, few manuscripts analyzing the publication trend of COVID-19 and non-COVID-19 articles,<sup>[10]</sup> scientometrics and citation trends of COVID-19 articles,<sup>[9]</sup> and scientometrics of literature were published in IJO.<sup>[17]</sup> But after a detailed literature review and to the best of our knowledge, none of the previous studies have analyzed the total number of COVID-19 articles in ophthalmic journals across the globe. This article aims to comprehensively analyze the total COVID-19 articles published in the IJO during the COVID-19 pandemic and to study their impact on ophthalmic literature. The analysis also highlights the total number of COVID-19 publications, monthly split-up, subspecialty-wise distribution, citation analysis, and the percentage growth rate.

## Methods

This was a two-year retrospective review of all of the COVID-19-related articles published in IJO, month-wise, from April 2020 to March 2022. Since the analysis did not involve any study participant, the study was exempted from the Institutional Review Board or the Institutional Ethical Committee approval. The data for expedited publications was obtained from the official website of IJO and were reconfirmed and matched with the data from IJO editor's personal monthly emails and PubMed search engine. The data collected was then exported as XML into Microsoft Access for intricate analysis.<sup>[9,10]</sup> The articles were segregated into original articles, review articles, case reports/series, commentaries, current ophthalmology consensus criteria, perspective, innovations, ophthalmic images, photoessays, and surgical techniques. The data was comprehensively analyzed for the monthly split-up of articles, total subspecialty-wise distribution, correlations, number of citations, reasons for citations, percentage growth rate, and their impact on ophthalmic literature. All major articles with a particular focus on a particular subspecialty, teleophthalmology, telemedicine, etc., were categorized as

original articles. The total data was compiled in tabular format for detailed analysis on 15 March 2022.

## Results

A total of 431 COVID-19 articles were published during the study period. A majority of the articles were letters to editors (158, 36.65%) followed by original articles (97, 22.50%) and commentaries (53, 12.29%). The least were perspectives and ophthalmic images (2, 0.46%) each followed by consensus criteria (1, (0.23%)). The maximum number of publications appeared in July 2020 (44, 10.20%) followed by December 2021 (37, 8.58%) and October 2021 (36, 8.35%) which were nearly twice the number of articles published in the rest of the months except April 2020 (1, 0.23%) when COVID-19 papers were just introduced by IJO [Table 1 and Fig. 1].

In the subspecialty wise distribution of COVID-19 publications, maximum articles were related to general ophthalmology (156, 36.19%), followed by retina (70, 16.24%), and cornea and ocular surface (60, 13.92%). The least number of publications were in optometry (3, 0.69%), and oncology (2, 0.46%) [Table 2 and Fig. 2].

Analyzing the three months with maximum publications, that is, July 2020 (44, 10.20%), followed by December and October 2021 with 37 articles (8.58%) and 36 articles (8.35%), respectively, of which 40 (9.28%) were related to general ophthalmology and 23 (5.34%) were related to retina and vitreous. In total, retina, and uvea ranked second with 70 (16.24%) articles, maximum being in October 2021 (17, 3.94%) followed by the cornea and ocular surface (60, 13.92%) articles with the maximum being 8 (1.86%) in July 2020 and December 2021. The least articles were contributed by research methodology (5, 1.16%) with 4 articles (0.92%) in May 2021 followed by optometry with a total of 3 articles (0.69%) with 1 (0.23%) each in June, August 2020 and April 2021, and oncology (2, 0.46%) with 1 article (0.23%) each in July 2020 and March 2021. Table 3 gives a detailed month-wise distribution of subspecialty COVID-19 articles.

Analyzing the total number of articles, subspecialty-wise average number of citations per article of COVID-19 publications, maximum citations were for original articles (97, 1146 (11.81)) followed by the letters to the editor (158, 743 (4.70)) and review articles (9, 387 (43)). The citation for original articles were approximately 3 times that of review articles and 1.5 times that of the letters to editor. The least were for consensus criteria (1, 4 (4)) and perspective (2, 2 (1)). Subspecialty-wise maximum citations were attracted by general ophthalmology (156, 1320 (8.46)) followed by oculoplasty (36, 592 (16.44)) and cornea (60, 448 (7.46)). The citations of the general ophthalmology were 3 times that of the cornea. The least number of citations were for trauma (6, 21 (3.5)) and optometry (3, 21 (7)) followed by research methodology (5, 12 (2.4)) and oncology (2, 9 (4.5)). The detailed citation analysis is depicted in Table 4a. The top ten cited COVID-19 publications during the pandemic in IJO is depicted in Table 4b.

The percentage growth pattern depicted two peaks during the first wave in July 2020 and towards the end of the second wave in October 2021, with a growth rate of 100% and 89.47%, respectively. The maximum percentage growth rate of 1300% was observed in May 2021 with a jump from

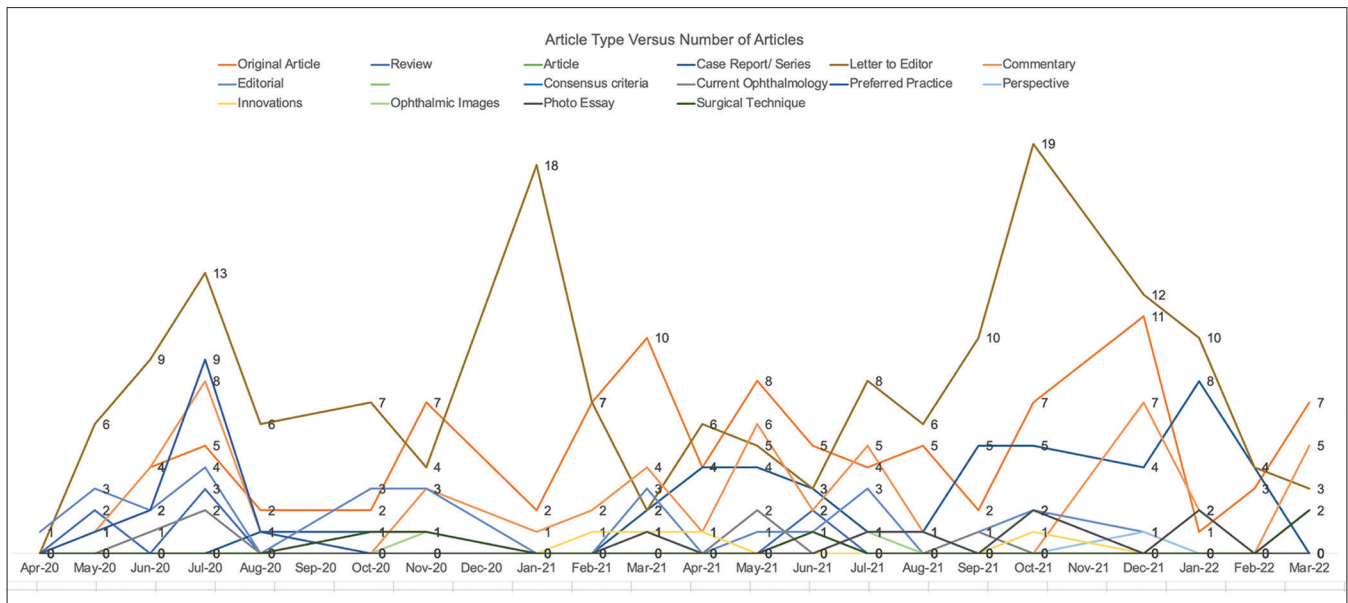


Figure 1: Bar chart depicting total number of expedited COVID-19 articles with monthly split-up published during the study period

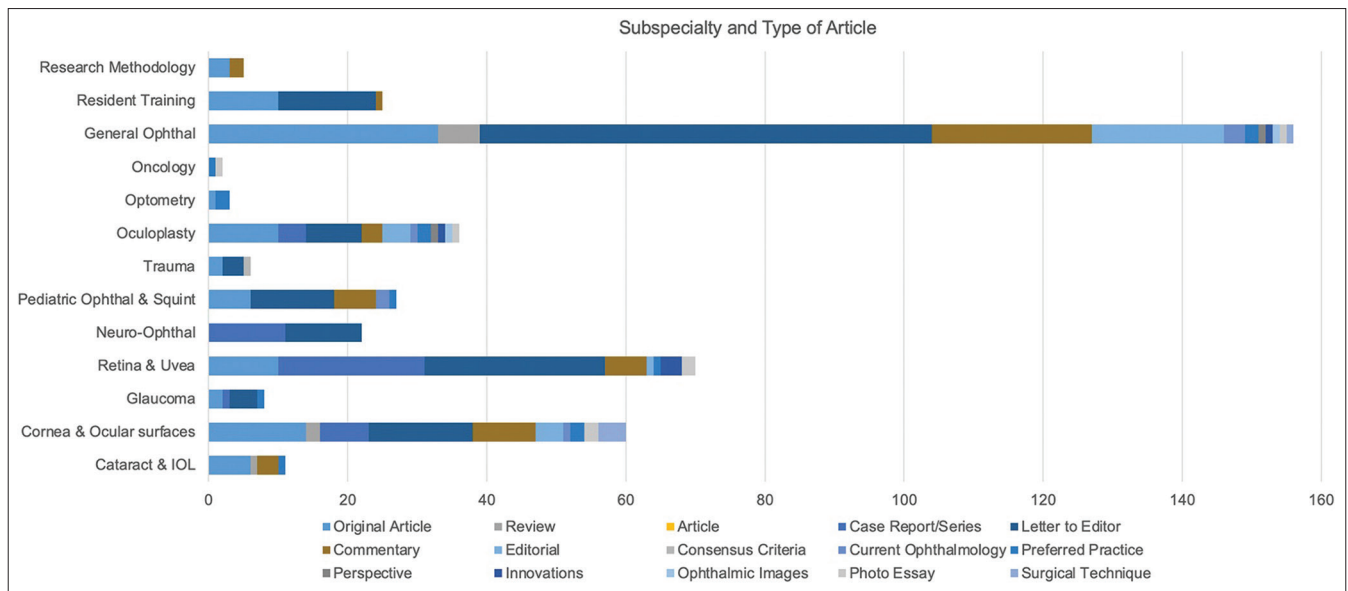


Figure 2: Bar chart depicting subspecialty-wise and type of article distribution of expedited COVID-19 articles during the study period

1 (0.23%) to 14 (3.24%) articles. The number of articles were nearly constant from November 2020 to July 2021, ranging from 16 (3.71%) to 26 (6.03%) articles. The percentage growth pattern was depicted in the negative, with the maximum (-75%) in August 2020 and the minimum (-4.54%) in January 2021. An ascending pattern was observed from September 2021 (35.71%) till March 2022 (54.54%) towards the last quarter, except in February 2022 (-52.17%). A detailed analysis is depicted in Table 5 and Fig. 3.

### Discussion

After the reports of the first case of the contagious COVID-19 virus from Wuhan, China, on 31 December 2019, an exponential increase in the number of COVID-19 cases were experienced across the globe.<sup>[2]</sup> Healthcare teams and experts

were under stress and, at the same time, were inquisitive about gathering information for clinical, logistical, and healthcare decision-making amidst the rapidly spreading fatal virus.<sup>[26]</sup> This gave birth to a considerable number of scientific submissions, a rapid peer review process, and expedited publications.<sup>[27]</sup> The Chinese community's initial scientific data and healthcare experiences through expedited publications served as an eye-opener that helped global communities and healthcare policymakers deal with the virus effectively.<sup>[27,28]</sup> This laid a foundation for further research on the virus and disseminating scientific knowledge through preprints and expedited publications.<sup>[29]</sup> These publications were instrumental in understanding the nature of pathology, modes of spread, varied clinical manifestations, epidemiological profiles, and management protocols.<sup>[30]</sup> Jarvis C., in his analysis, reported that up to 40 COVID-19-articles were received by the New

**Table 1: Total number of COVID-19 articles with monthly split-up published during the pandemic in Indian Journal of Ophthalmology (online only)**

Article Type	Apr 20	May 20	Jun 20	Jul 20	Aug 20	Oct 20	Nov 20	Jan 21	Feb 21	Mar 21	Apr 21
Original Article	0 (0%)	1 (0.23%)	4 (0.92%)	5 (1.16%)	2 (0.46%)	2 (0.46%)	7 (1.62%)	2 (0.46%)	7 (1.62%)	10 (2.32%)	4 (0.92%)
Review Article	0 (0%)	2 (0.46%)	0 (0%)	3 (0.69%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (0.23%)	0 (0%)
Case Report/Series	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (0.23%)	1 (0.23%)	1 (0.23%)	0 (0%)	0 (0%)	2 (0.46%)	4 (0.92%)
Letter to Editor	0 (0%)	6 (1.39%)	9 (2.08%)	13 (3.01%)	6 (1.39%)	7 (1.62%)	4 (0.92%)	18 (4.17%)	7 (1.62%)	2 (0.46%)	6 (1.39%)
Commentary	0 (0%)	1 (0.23%)	4 (0.92%)	8 (1.85%)	1 (0.23%)	0 (0%)	3 (0.69%)	1 (0.23%)	2 (0.46%)	4 (0.92%)	1 (0.23%)
Editorial	1 (0.23%)	3 (0.69%)	2 (0.46%)	4 (0.92%)	0 (0%)	3 (0.69%)	3 (0.69%)	0 (0%)	0 (0%)	3 (0.69%)	0 (0%)
Consensus criteria	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (0.23%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Current Ophthalmology	0 (0%)	0 (0%)	1 (0.23%)	2 (0.46%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Preferred Practice	0 (0%)	1 (0.23%)	2 (0.46%)	9 (2.08%)	1 (0.23%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Perspective	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (0.23%)	0 (0%)
Innovations	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (0.23%)	0 (0%)	1 (0.23%)	1 (0.23%)	1 (0.23%)
Ophthalmic Images	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (0.23%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Photo Essay	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (0.23%)	0 (0%)
Surgical Technique	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (0.23%)	1 (0.23%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
<b>Total</b>	<b>1 (0.23%)</b>	<b>14 (3.24%)</b>	<b>22 (5.10%)</b>	<b>44 (10.20%)</b>	<b>11 (2.55%)</b>	<b>14 (3.24%)</b>	<b>22 (5.10%)</b>	<b>21 (4.87%)</b>	<b>17 (3.94%)</b>	<b>25 (5.80%)</b>	<b>16 (3.71%)</b>

Article Type	May 21	Jun 21	Jul 21	Aug 21	Sep 21	Oct 21	Dec 21	Jan 22	Feb 22	Mar 22	Total
Original Article	8 (1.85%)	5 (1.16%)	4 (0.92%)	5 (1.16%)	2 (0.46%)	7 (1.62%)	11 (2.55%)	1 (0.23%)	3 (0.69%)	7 (1.62%)	97 (22.50)
Review Article	0 (0%)	2 (0.465%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (0.46%)	0 (0%)	0 (0%)	0 (0%)	9 (2.08%)
Case Report/Series	4 (0.92%)	3 (0.69%)	1 (0.23%)	1 (0.23%)	5 (1.16%)	5 (1.16%)	4 (0.92%)	8 (1.85%)	4 (0.92%)	0 (0%)	44 (10.20%)
Letter to Editor	5 (1.16%)	3 (0.69%)	8 (1.85%)	6 (1.39%)	10 (2.32%)	19 (4.40%)	12 (2.78%)	10 (2.32%)	4 (0.92%)	3 (0.69%)	158 (36.65%)
Commentary	6 (1.39%)	2 (0.46%)	5 (1.16%)	1 (0.23%)	0 (0%)	0 (0%)	7 (1.62%)	2 (0.46%)	0 (0%)	5 (1.16%)	53 (12.29%)
Editorial	1 (0.23%)	1 (0.23%)	3 (0.69%)	0 (0%)	1 (0.23%)	2 (0.46%)	1 (0.23%)	0 (0%)	0 (0%)	0 (0%)	28 (6.49%)
Consensus criteria	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (0.23%)
Current Ophthalmology	2 (0.46%)	0 (0%)	1 (0.23%)	0 (0%)	1 (0.23%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	7 (1.62%)
Preferred Practice	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	13 (3.01%)
Perspective	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (0.23%)	0 (0%)	0 (0%)	0 (0%)	2 (0.46%)
Innovations	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (0.23%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	5 (1.16%)
Ophthalmic Images	0 (0%)	0 (0%)	1 (0.23%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (0.46%)
Photo Essay	0 (0%)	0 (0%)	1 (0.23%)	1 (0.23%)	0 (0%)	2 (0.46%)	0 (0%)	2 (0.46%)	0 (0%)	0 (0%)	7 (1.62%)
Surgical Technique	0 (0%)	1 (0.23%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (0.46%)	5 (1.160%)
<b>Total</b>	<b>26 (6.03%)</b>	<b>17 (3.94%)</b>	<b>24 (5.56%)</b>	<b>14 (3.24%)</b>	<b>19 (4.40%)</b>	<b>36 (8.35%)</b>	<b>37 (8.58%)</b>	<b>23 (5.33%)</b>	<b>11 (2.55%)</b>	<b>17 (3.94%)</b>	<b>431 (100%)</b>

Note: September 2020 issue was a special issue on uvea, December 2020 on refractive surgery, and November 2021 was on diabetic retinopathy and had no COVID-19-related publications



**Table 2: Subspecialty-wise and type of article distribution of COVID-19 articles during the pandemic in *Indian Journal of Ophthalmology***

Subspecialty and Type of Article	Cataract & IOL	Cornea & Ocular surfaces	Glaucoma	Retina & Uvea	Neuro-Ophthal	Pediatric Ophthal & Squint	Trauma
Original Article	6 (1.39%)	14 (3.25%)	2 (0.46%)	10 (2.32%)	0 (0%)	6 (1.39%)	2 (0.46%)
Review Article	1 (0.23%)	2 (0.46%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Case Report/Series	0 (0%)	7 (1.62%)	1 (0.23%)	21 (4.87%)	11 (2.55%)	0 (0%)	0 (0%)
Letter to Editor	0 (0%)	15 (3.48%)	4 (0.93%)	26 (6.03%)	11 (2.55%)	12 (2.78%)	3 (0.69%)
Commentary	3 (0.69%)	9 (2.09%)	0 (0%)	6 (1.39%)	0 (0%)	6 (1.39%)	0 (0%)
Editorial	0 (0%)	4 (0.93%)	0 (0%)	1 (0.23%)	0 (0%)	0 (0%)	0 (0%)
Consensus Criteria	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (0.23%)
Current Ophthalmology	0 (0%)	1 (0.23%)	0 (0%)	0 (0%)	0 (0%)	2 (0.46%)	0 (0%)
Preferred Practice	1 (0.23%)	2 (0.46%)	1 (0.23%)	1 (0.23%)	0 (0%)	1 (0.23%)	0 (0%)
Perspective	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Innovations	0 (0%)	0 (0%)	0 (0%)	3 (0.69%)	0 (0%)	0 (0%)	0 (0%)
Ophthalmic Images	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Photo Essay	0 (0%)	2 (0.46%)	0 (0%)	2 (0.46%)	0 (0%)	0 (0%)	0 (0%)
Surgical Technique	0 (0%)	4 (0.93%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Total	11 (2.55%)	60 (13.92%)	8 (1.86%)	70 (16.24%)	22 (5.10%)	27 (6.26%)	6 (1.39%)

Subspecialty and Type of Article	Oculoplasty	Optometry	Oncology	General Ophthal	Resident Training	Research Methodology	Total
Original Article	10 (2.32%)	1 (0.23%)	0 (0%)	33 (7.66%)	10 (2.32%)	3 (0.69%)	97 (22.51%)
Review Article	0 (0%)	0 (0%)	0 (0%)	6 (1.39%)	0 (0%)	0 (0%)	9 (2.09%)
Case Report/Series	4 (0.93%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	44 (10.21%)
Letter to Editor	8 (1.86%)	0 (0%)	0 (0%)	65 (15.08%)	14 (3.25%)	0 (0%)	158 (36.66%)
Commentary	3 (0.69%)	0 (0%)	0 (0%)	23 (5.34%)	1 (0.23%)	2 (0.46%)	53 (12.29%)
Editorial	4 (0.93%)	0 (0%)	0 (0%)	19 (4.41%)	0 (0%)	0 (0%)	28 (6.49%)
Consensus Criteria	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (0.23%)
Current Ophthalmology	1 (0.23%)	0 (0%)	0 (0%)	3 (0.69%)	0 (0%)	0 (0%)	7 (1.62%)
Preferred Practice	2 (0.46%)	2 (0.46%)	1 (0.23%)	2 (0.46%)	0 (0%)	0 (0%)	13 (3.02%)
Perspective	1 (0.23%)	0 (0%)	0 (0%)	1 (0.23%)	0 (0%)	0 (0%)	2 (0.46%)
Innovations	1 (0.23%)	0 (0%)	0 (0%)	1 (0.23%)	0 (0%)	0 (0%)	5 (1.16%)
Ophthalmic Images	1 (0%)	0 (0%)	0 (0%)	1 (0.75%)	0 (0%)	0 (0%)	2 (0.46%)
Photo Essay	1 (0.23%)	0 (0%)	1 (0.23%)	1 (1.5%)	0 (0%)	0 (0%)	7 (1.62%)
Surgical Technique	0 (0%)	0 (0%)	0 (0%)	1 (0.23%)	0 (0%)	0 (0%)	5 (1.16%)
Total	36 (8.35%)	3 (0.69%)	2 (0.46%)	156 (36.19%)	25 (5.80%)	5 (1.16%)	431 (100%)

England Journal of Medicine (NEJM) in a single day.<sup>[31]</sup> Similarly, in another report, about 235 articles were received by the Journal of the American Medical Association (JAMA) in a single day.<sup>[26]</sup> Thus, there was a definite need for stringent peer review and expedited publications across the globe. The IJO was not far behind in adapting to accelerate its quality articles with a quicker reach.

A total of 431 COVID-19 articles were published during the study period with maximum contributions in the form of a letter to the editor (158, 36.66%)<sup>[32]</sup> followed by original articles (97, 22.51%),<sup>[33]</sup> and commentaries (53, 12.29%).<sup>[34]</sup> This was probably due to sharing personal COVID-19 experiences from different centers in a quickly disseminated format of letters to the editor, quality of original articles, and the need to rapidly disseminate evidence-based ophthalmic literature to safeguard and improve practice patterns. The interesting feature was a large number of case reports (44, 10.21%) probably

due to evolving heterogeneous manifestations of the COVID-19 virus, rapid publications with growing evidence of various case reports<sup>[35]</sup> across the globe, and shorter format. A large number of commentaries followed the original articles and novel publications by the expert editorial staff of the IJO for sharing their broad spectrum of knowledge and experience. The least number of articles were contributed in the form of perspectives<sup>[36]</sup> and ophthalmic images with 2 (0.46%) each followed by consensus criteria (1, 0.23%). The perspective articles were less, probably because the evidence-based COVID-19 literature was growing and personal viewpoints regarding the virus took a backseat. Ophthalmic images and photoessays were also less, perhaps because of fear of contracting the virus and close contact while capturing images, and the clinical associations were probably chance findings. The maximum number of COVID-19 publications were witnessed in July 2020 (44, 10.21%), followed closely by December and October 2021 with 37 (8.58%) and 36 (8.35%)

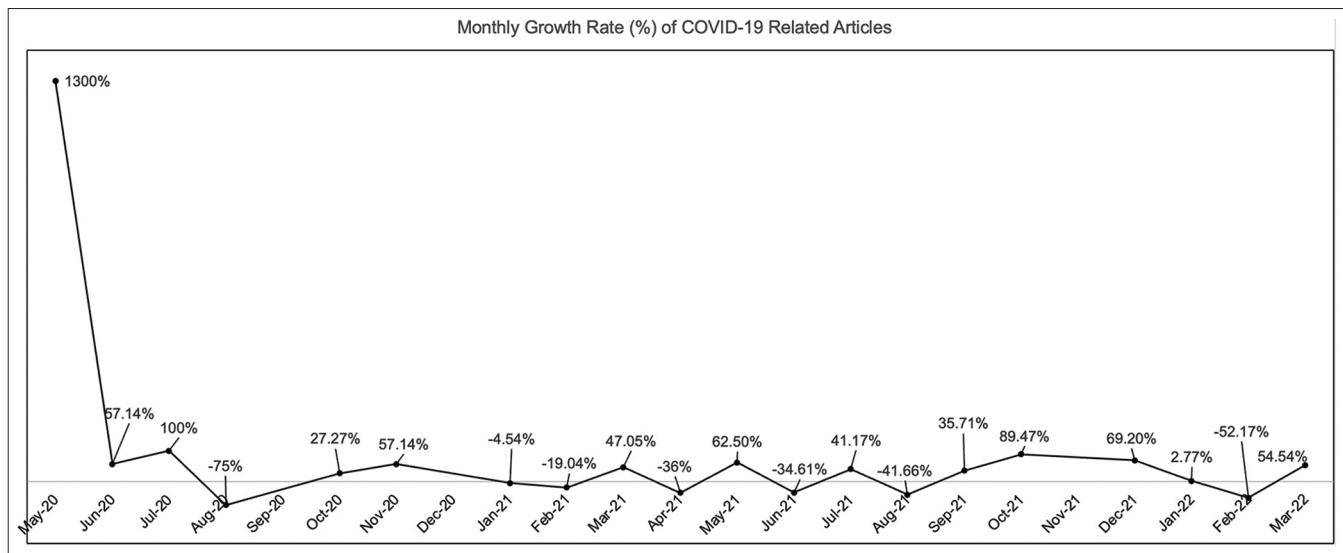
**Table 3: Subspecialty month-wise distribution of COVID-19 articles during the pandemic in *Indian Journal of Ophthalmology* (online only)**

Sub-specialty	Apr 2020	May 20	Jun 20	Jul 20	Aug 20	Oct 20	Nov 20	Jan 21	Feb 21	Mar 21	Apr 21
Cataract and IOL	0 (0%)	0 (0%)	0 (0%)	1 (0.23%)	0 (0%)	1 (0.23%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Cornea and Ocular Surface	0 (0%)	1 (0.23%)	4 (0.92%)	8 (1.86%)	2 (0.46%)	3 (0.69%)	4 (0.93%)	5 (1.16%)	3 (0.69%)	1 (0.23%)	1 (0.23%)
Glaucoma	0 (0%)	0 (0%)	1 (0.23%)	2 (0.46%)	0 (0%)	2 (0.46%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Retina & Uvea	0 (0%)	0 (0%)	2 (0.46%)	1 (0.23%)	0 (0%)	3 (0.69%)	2 (0.46%)	4 (0.92%)	2 (0.46%)	3 (0.69%)	2 (0.46%)
Neuro-Ophthalmal	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (0.46%)	2 (0.46%)
Pediatric Ophthalmal & Squint	0 (0%)	0 (0%)	0 (0%)	4 (0.92%)	2 (0.46%)	0 (0%)	0 (0%)	3 (0.69%)	1 (0.23%)	1 (0.23%)	1 (0.23%)
Trauma	0 (0%)	0 (0%)	1 (4.55%)	0 (4.55%)	0 (0%)	0 (0%)	1 (0%)	0 (0%)	0 (0%)	1 (0.23%)	0 (0%)
Oculoplasty	0 (0%)	0 (0%)	1 (9.09%)	1 (20.45%)	0 (9.09%)	0 (0%)	1 (0%)	0 (0%)	1 (0%)	2 (0%)	1 (0%)
Optometry	0 (0%)	0 (0%)	1 (0.23%)	0 (0%)	1 (0.23%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (0.23%)
Oncology	0 (0%)	0 (0%)	0 (0%)	1 (0.23%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (0.23%)	0 (0%)
General Ophthalmal	1 (0.23%)	13 (2.81%)	10 (2.32%)	26 (6.03%)	6 (1.39%)	5 (1.16%)	14 (3.24%)	7 (1.62%)	8 (1.85%)	13 (3.01%)	7 (1.62%)
Resident training	0 (0%)	0 (0%)	2 (0.46%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (0.46%)	2 (0.46%)	1 (0.23%)	1 (0.23%)
Research Methodology	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Total	1 (0.23%)	14 (3.24%)	22 (5.10%)	44 (10.20%)	11 (2.55%)	14 (3.24%)	22 (5.10%)	21 (4.87%)	17 (3.94%)	25 (5.80%)	16 (3.71%)

Sub-specialty	May 21	Jun 2021	Jul 21	Aug 21	Sep 21	Oct 21	Dec 21	Jan 22	Feb 22	Mar 22	Total
Cataract and IOL	0 (0%)	3 (0.69%)	1 (0.23%)	0 (0%)	0 (0%)	2 (0.46%)	3 (0.69%)	0 (0%)	0 (0%)	0 (0%)	11 (2.55%)
Cornea and Ocular Surface	1 (0.23%)	4 (0.92%)	2 (0.46%)	0 (0%)	3 (0.69%)	4 (0.92%)	8 (1.86%)	3 (0.69%)	0 (0%)	3 (0.69%)	60 (13.92%)
Glaucoma	1 (0.23%)	1 (0.23%)	0 (0%)	1 (0.23%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	8 (1.86%)
Retina & Uvea	10 (2.32%)	0 (0%)	3 (0.69%)	0 (0%)	1 (0.23%)	17 (3.94%)	5 (1.16%)	9 (2.09%)	4 (0.92%)	2 (0.46%)	70 (16.24%)
Neuro-Ophthalmal	0 (0%)	1 (0.23%)	0 (0%)	3 (0.69%)	3 (0.69%)	2 (0.46%)	2 (0.46%)	5 (1.16%)	2 (0.46%)	0 (0%)	22 (5.10%)
Pediatric Ophthalmal & Squint	2 (0.46%)	0 (0%)	0 (0%)	0 (0%)	3 (0.69%)	0 (0%)	3 (0.69%)	2 (0.46%)	1 (0.23%)	4 (0.93%)	27 (6.26)
Trauma	0 (1.5%)	1 (0%)	0 (0.75%)	0 (0%)	0 (0%)	1 (0.23%)	1 (0.23%)	0 (0%)	0 (0%)	0 (0%)	6 (1.39%)
Oculoplasty	0 (0%)	3 (0%)	7 (1.62)	1 (0.23%)	4 (0.92%)	1 (0.23%)	6 (1.39%)	2 (0.46%)	2 (0.46%)	3 (0.69%)	36 (8.35%)
Optometry	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	3 (0.69%)
Oncology	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (0.46%)
General Ophthalmal	3 (0.69%)	4 (0.92%)	7 (1.62%)	6 (1.39%)	5 (1.16%)	7 (1.62%)	7 (1.62%)	1 (0.23%)	2 (0.46%)	4 (0.93%)	156 (36.19%)
Resident training	5 (1.16%)	0 (0%)	4 (0.92%)	2 (0.46%)	0 (0%)	2 (0.46%)	2 (0.46%)	1 (0.23%)	0 (0%)	1 (0.23%)	25 (5.80)
Research Methodology	4 (0.92%)	0 (0%)	0 (0%)	1 (0.23%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	5 (1.16%)
Total	26 (6.03%)	17 (3.94%)	24 (5.56%)	14 (3.24%)	19 (4.40%)	36 (8.35%)	37 (8.58%)	23 (5.33)	11 (2.55)	17 (3.94)	431 (100%)

Note: September 2020 issue was a special issue on uvea, December 2020 on refractive surgery, and November 2021 was on diabetic retinopathy and had no COVID-19-related publications



**Figure 3:** Line diagram depicting total number of expedited COVID-19 articles published in IJO during the study period with the growth rate

articles, respectively, just before and post lockdown due to a reduction in patient volume and ample time for researchers for manuscript preparation and submission. Moreover, the first two issues of expedited publications also energized the editorial staff and the researchers for another format of the rapid dissemination of scientific content involving a quick publication process.

In the subspecialty-wise distribution of COVID-19 publications, maximum attention was given to general ophthalmology (156, 36.19%) followed by retina (70, 16.24%), cornea and ocular surface (60, 13.92%), oculoplasty (36, 8.35%), pediatrics (27, 6.26%) and resident training (25, 5.80%). The general ophthalmology COVID-19 publications were 2 times that of retina, 2.5 times that of cornea, 4.5 times that of oculoplasty, and approximately 6 times that of pediatrics and resident training articles. Teleophthalmology articles,<sup>[37]</sup> COVID-19-based practice pattern surveys,<sup>[38]</sup> digital eye strain articles,<sup>[39]</sup> articles pertaining to postgraduate education,<sup>[40]</sup> and perception regarding webinars<sup>[52]</sup> formed the chunk of general ophthalmology articles and formed the backbone of COVID-19 research. The probable reasons for more general ophthalmology articles were the special focus on improving postgraduate training and education backlogs, and the growing pandemic of online e-learning and teaching, and the boom of webinars. Another aspect that deserves attention is the expedited mucormycosis publications, of which one was the largest multicentric database from India.<sup>[6]</sup> Neuro-ophthalmology was another subspecialty that had a deep impact through various expedited case reports in the form of Holmes-Adie syndrome,<sup>[41]</sup> intracranial hypertension,<sup>[42]</sup> and occipital infarct<sup>[43]</sup> associated with COVID-19. The interesting add-on was research methodology-based publication in the form of publication trends of COVID-19- and non-COVID-19-related articles in IJO,<sup>[10]</sup> scientometrics, citation analysis of COVID-19 literature,<sup>[9]</sup> and scientometrics of ophthalmology COVID-19 publications,<sup>[44]</sup> which had commentaries by experts and a large number of downloads and reads. The least number of COVID-19 publications were from glaucoma (8, 1.86%),<sup>[45]</sup> trauma<sup>[46]</sup> (6, 1.39%), research methodology (5, 1.16%),<sup>[44]</sup>

optometry (3, 0.69%),<sup>[47]</sup> and oncology<sup>[48]</sup> [2 (0.46%)]. This was probably due to the least COVID-19-related manifestations in these particular subspecialties. There was an interesting publication on the need for immediate and bilateral sequential cataract surgery during the COVID-19 pandemic,<sup>[49]</sup> which was probably the need of the hour, owing to the lack of access to eye care in rural areas and the growing threat of the spread of the virus with multiple hospital visits and surgical interventions. There were interesting articles on Ahmed glaucoma valve in refractory glaucoma<sup>[50]</sup> in COVID-19 patients, the impact of COVID-19 on glaucoma, and the urgent need for advanced glaucoma management during the pandemic.<sup>[45]</sup> Optometry articles also attracted attention in the form of the impact of COVID-19 on optometry practice.<sup>[47]</sup> Surprisingly, there were only six articles on ocular trauma<sup>[46]</sup> being common at major eye care centers. This was probably because the majority of cases were referred to higher centers for a multidisciplinary approach. Interestingly, there was an ocular oncology report in the form of chronic myeloid leukemia (CML) in a COVID-19 patient.

The May 2021 issue also saw the renaissance of scientometry-related expedited publications<sup>[10,44]</sup> (4, 4.08%), which added flavor to the research during COVID-19 and gave valuable insights regarding the citation trend and impact of COVID-19 on ophthalmic literature. There were a of total 11 (2.55%) cataract- and IOL-related publications in the form of immediate sequential bilateral cataract surgery,<sup>[49]</sup> changing trends in cataract morphology at a tertiary eye center, and impact of COVID-19 on cataract surgical volume. This was probably due to lockdown from April to June, and there was an urgent need to curb the growing cataract burden at major centers across the country. In July 2020, there were more general ophthalmology (26, 6.03%)<sup>[51]</sup> and cornea (8, 1.86%) articles due to the limited literature available, as well as growing evidence of the spread of the virus through the ocular surface. In retina and uvea, there were interesting articles of endogenous fungal endophthalmitis<sup>[52]</sup> and central retinal artery occlusion (CRAO) with paracentral acute middle maculopathy (PAMM)<sup>[53]</sup> in COVID-19 patients probably due to immune suppression and lack of easy access

**Table 4 (a): Number of the article, subspecialty-wise citation count, and average number of citations per article of COVID-19 articles during the pandemic in the Indian Journal of Ophthalmology**

Subspecialty and Type of Article	Cataract & IOL	Cornea & Ocular surfaces	Glaucoma	Retina & Uvea	Neuro-Ophthal	Pediatric Ophthal & Squint	Trauma
Original Article	6, 5 (0.83)	14, 138 (9.85)	2, 11 (5.5)	10, 45 (4.5)	0, 0 (0)	6, 80 (6.66)	2, 8 (4)
Review Article	1, 1 (1)	2, 20 (10)	0, 0 (0)	0, 0 (0)	0, 0 (0)	0, 0 (0)	0, 0 (0)
Case Report/Short Case Series	0, 0 (0)	7, 28 (4)	1, 0 (0)	21, 193 (9.19)	11, 35 (3.18)	0, 0 (0)	0, 0 (0)
Letter to Editor	0,0 (0)	15, 159 (10.60)	4, 5 (1.25)	26,67 (2.57)	11, 9 (0.81)	12, 78 (6.5)	3, 9 (3)
Commentary	3, 3 (0)	9, 7 (0.3)	0, 0 (0)	6, 1 (0)	0, 0 (0)	6, 0 (0)	0, 0 (0)
Editorial	0, 0 (0)	4, 33 (8.25)	0, 0 (0)	1, 4 (4)	0, 0 (0)	0, 0 (0)	0, 0 (0)
Consensus criteria	0, 0 (0)	0, 0 (0)	0, 0 (0)	0,0 (0)	0, 0 (0)	0, 0 (0)	1, 4 (4)
Current Ophthalmology	0, 0 (0)	1, 20 (20)	0, 0 (0)	0, 0 (0)	0, 0 (0)	2, 2 (1)	0, 0 (0)
Preferred practices	1, 16 (16)	2, 23 (11.5)	1, 12 (12)	1,27 (27)	0, 0 (0)	1, 9 (9)	0, 0 (0)
Perspective	0, 0 (0)	0, 0 (0)	0, 0 (0)	0, 0 (0)	0, 0 (0)	0, 0 (0)	0, 0 (0)
Innovations	0, 0 (0)	0, 0 (0)	0, 0 (0)	3, 5 (1.6)	0, 0 (0)	0, 0 (0)	0, 0 (0)
Ophthalmic Images	0,0 (0)	0, 0 (0)	0, 0 (0)	0, 0 (0)	0, 0 (0)	0, 0 (0)	0, 0 (0)
Photo Essay	0, 0 (0)	2, 13 (6.5)	0, 0 (0)	2, 2 (1)	0, 0 (0)	0, 0 (0)	0, 0 (0)
Surgical technique	0, 0 (0)	4, 7 (1.7)	0, 0 (0)	0, 0 (0)	0, 0 (0)	0, 0 (0)	0, 0 (0)
Total	11, 25 (2.27)	60, 448 (7.46)	8, 28 (3.5)	70, 344 (4.91)	22, 44 (2)	27, 169 (6.25)	6, 21 (3.5)

Subspecialty and Type of Article	Oculoplasty	Optometry	Oncology	General Ophthal	Resident Training	Research Methodology	Total
Original Article	10, 322 (32.2)	1, 3 (3)	0, 0 (0)	33, 399 (12.09)	10, 123 (12.3)	3, 12 (4)	97, 1146 (11.81)
Review Article	0, 0 (73)	0, 0 (0)	0, 0 (0)	6, 366 (61)	0, 0 (0)	0, 0 (0)	9, 387 (43)
Case Report/Short Case Series	4, 28 (7)	0, 0 (0)	0, 0 (0)	0, 0 (0)	0, 0 (0)	0, 0 (0)	44, 284 (6.45)
Letter to Editor	8, 114 (14.25)	0, 0 (0)	0, 0 (0)	65, 144 (2.21)	14, 158 (11.28)	0, 0 (0)	158, 743 (4.70)
Commentary	3, 0 (0)	0, 0 (0)	0, 0 (0)	23, 75 (0.1)	1, 0 (0)	2, 0 (0.08)	53, 86 (1.63)
Editorial	4, 84 (21)	0, 0 (0)	0, 0 (0)	19, 148 (7.78)	0, 0 (0)	0, 0 (0)	28, 269 (9.60)
Consensus criteria	0,0 (0)	0, 0 (0)	0, 0 (0)	0, 0 (0)	0, 0 (0)	0, 0 (0)	1,4 (4)
Current Ophthalmology	1, 13 (13)	0, 0 (0)	0, 0 (0)	3, 63 (21)	0, 0 (0)	0, 0 (0)	7, 98 (14)
Preferred practices	2, 25 (12.5)	2, 18 (9)	1, 8 (8)	2, 119 (59.5)	0, 0 (0)	0, 0 (0)	13, 257 (19.76)
Perspective	1, 1 (1)	0, 0 (0)	0, 0 (0)	1, 1 (1)	0, 0 (0)	0, 0 (0)	2, 2 (1)
Innovations	1, 0 (0)	0, 0 (0)	0, 0 (0)	1, 5 (5)	0, 0 (0)	0, 0 (0)	(2)
Ophthalmic Images	1, 5 (5)	0, 0 (0)	0, 0 (0)	1, 0 (0)	0, 0 (0)	0, 0 (0)	2, 5 (2.5)
Photo Essay	1, 0 (0)	0, 0 (0)	1, 1 (1)	1, 0 (0)	0, 0 (0)	0, 0 (0)	7, 16 (2.2)
Surgical technique	0, 0 (0)	0, 0 (0)	0, 0 (0)	1, 0 (0)	0, 0 (0)	0, 0 (0)	5, 7 (1.4)
Total	36, 592 (16.44)	3, 21 (7)	2, 9 (4.5)	156, 1320 (8.46)	25, 281 (11.24)	5, 12 (2.4)	431, 3314 (7.68)

to eye care due to growing COVID-19 challenges and stricter protocols [Table 3].

Analyzing the total number of articles, citation count of COVID-19 publications, and average citations, maximum citations were received by original articles (97, 1146 (11.81)) followed by letters to the editor (158, 743 (4.70)) and review articles (9, 387 (43)). The ratio of citations of original articles to that of review articles was 3:1, and the original article to that of letters to the editor was 1.5:1. This was due to evidence-based expedited COVID-19 research adding value to the evolving literature on COVID-19 manifestations and management, more original articles, and high-quality COVID-19 research by experts in their fields. It was interesting to see a lot of multispecialty original expedited articles by senior researchers giving a brighter path for further ophthalmology oriented COVID-19

research in India. The major focus during the lockdown was mucormycosis-related COVID-19 research. The original article “Mucor in a viral land- A tale of two pathogens” by Sen *et al.*<sup>[18]</sup> had as high as 159 citations, and the letter by Sarkar *et al.*,<sup>[21]</sup> “COVID-19 and orbital Mucormycosis” had 108 citations. The multicentric “Collaborative OPAI-IJO Study on Mucormycosis in COVID-19 (COSMIC), Report 1” by Sen *et al.*,<sup>[6]</sup> has as high as 87 citations and formed the hallmark of expedited publications.

Interestingly, 354 citations alone for 3 mucormycosis articles formed 10.68% of the total citations. Surprisingly during the study period, case reports had 284 citations which were far more than other formats of publications, probably due to varied manifestations of COVID-19, and inquisitiveness and clinical expertise of researchers to document the lacunae and novel manifestations of COVID-19 in the literature. The least citations



**Table 4 (b): Top 10 cited COVID-19 articles published in the *Indian Journal of Ophthalmology***

Author name	Article Type	Subspecialty	Title	Total Citations
Khanna <i>et al.</i> (May 2020) <sup>[54]</sup>	Review	General Ophthalmology	COVID-19 pandemic: Lessons learned and future directions	169
Sen <i>et al.</i> <sup>[18]</sup> (February 2021)	Original	Orbit	Mucor in a Viral Land: A Tale of Two Pathogens	159
Nair <i>et al.</i> <sup>[19]</sup> (May 2020)	Original	General Ophthalmology	Effect of COVID-19 related lockdown on ophthalmic practice and patient care in India: Results of a survey	157
Kaup <i>et al.</i> <sup>[20]</sup> (June 2020)	Letter	Resident Training	Sustaining academics during COVID-19 pandemic: The role of online teaching-learning	142
Sarkar <i>et al.</i> <sup>[21]</sup> (April 2021)	Letter	Orbit	COVID-19 and orbital Mucormycosis	108
Sengupta <i>et al.</i> <sup>[22]</sup> (May 2020)	Preferred practices	General Ophthalmology	All India Ophthalmological Society - Indian Journal of Ophthalmology consensus statement on preferred practices during the COVID-19 pandemic	106
Mishra <i>et al.</i> <sup>[23]</sup> (June 2020)	Original	General Ophthalmology	The impact of COVID-19 related lockdown on ophthalmology training programs in India – Outcomes of a survey	105
Sen <i>et al.</i> <sup>[24]</sup> (March 2021)	Review	General Ophthalmology	COVID-19 and Eye: A Review of Ophthalmic Manifestations of COVID-19	99
Khanna <i>et al.</i> <sup>[25]</sup> (June 2020)	Original	General Ophthalmology	Psychological impact of COVID-19 on ophthalmologists-in-training and practising ophthalmologists in Indi	88
Sen <i>et al.</i> <sup>[6]</sup> (July 2021)	Original	Orbit	Epidemiology, clinical profile, management, and outcome of COVID-19-associated rhino-orbital-cerebral Mucormycosis in 2826 patients in India - Collaborative OPAI-IJO Study on Mucormycosis in COVID-19 (COSMIC), Report 1	87

**Table 5: Total number of COVID-19 articles published in *Indian Journal of Ophthalmology* during the study period with the growth rate (online only)**

Month	Published Articles (P)	Percentage (P/N)	Growth Rate (%)
April 2020	1	0.23%	-
May 2020	14	3.24%	1300%
June 2020	22	5.10%	57.14%
July 2020	44	10.20%	100%
August 2020	11	2.55%	-75%
October 2020	14	3.24%	27.27%
November 2020	22	5.10%	57.14%
January 2021	21	4.87%	-4.54%
February 2021	17	3.94%	-19.04%
March 2021	25	5.80%	47.05%
April 2021	16	3.71%	-36%
May 2021	26	6.03%	62.5%
June 2021	17	3.94%	-34.61%
July 2021	24	5.56%	41.17%
August 2021	14	3.24%	-41.66%
September 2021	19	4.40%	35.71%
October 2021	36	8.35%	89.47%
December 2021	37	8.58%	69.2%
January 2022	23	5.33%	2.77%
February 2022	11	2.55%	-52.17%
March 2022	17	3.94%	54.54%
Total	431	100%	

were for trauma (6, 21 (3.5)) and optometry (3, 21 (7)) followed by research methodology (5 2 (2.4)) and oncology (2, 9 (4.5))

because these were limited submissions in these categories. Probably these were very rare manifestations and were not reported till now across the globe.

Considering the growth rate, initially, there has been a big leap from April to May 2021 with a 1300% jump. July 2020 (100%) and October 2021 (89.47%) also saw the peak of COVID-19 articles, and after May 2020, periodical troughs and crests were observed in the growth rate. The last quarter again saw a surge in growth rate with October 2021 (89.47%) and March 2022 (54.54%).

To the best of our knowledge, this is the first paper describing the two-year cumulative analysis of COVID-19 literature from the IJO and giving valuable insights into the impact of these publications on the ophthalmic literature. This has helped broaden the perspective of researchers and their thought process, attracted more readership, downloads, citations, and hiked the impact factor. There were a few limitations to our study, such as its retrospective nature and that only Google Scholar citations were taken into account as of 15 March 2022. The strengths are that this is the first-ever article giving a detailed analysis on COVID-19 research from Indian Ophthalmology across the globe with valuable insights into article trend, citation, and growth rate. IJO has been instrumental in expediting quality COVID-19 research of intellectual minds, and has played a crucial role in defining COVID-19 guidelines and protocols for ophthalmology practice and research across the globe.

## Conclusion

IJO opened a window of opportunity for authors by publishing quality COVID-19 articles with an additional expedited format. Mucormycosis publications gathered most of the attention due to its heterogeneous manifestations. The peak of the first

wave (June–July 2020) and the October and December 2021 issues had maximum COVID-19 publications.

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### Conflicts of interest

There are no conflicts of interest.

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