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## Open Access Journals in Ophthalmology and Vision Science: All That Glitters Is Not Gold

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Clinicians and researchers interested in scientific advances often locate research published in 2 types of journals: traditional and open access. Traditional journals require readers (or their institutions) to have a subscription or pay a fee before they are able to access journal content; open-access journals provide the content on the Internet free of charge to the readers. Some traditional journals, such as *Ophthalmology*, now provide a hybrid publishing option (<https://www.elsevier.com/journals/ophthalmology/0161-6420/open-access-options>), in which authors can choose to pay a fee to make their articles freely available to both subscribers and the wider public with permitted reuse.

Under a strictly open-access publishing model, instead of subscription and per-use access fees, revenue comes by article processing fees paid by authors or their research funders. Readers benefit from information now made freely available to them on the Internet. Authors benefit from wider dissemination of their work and academic rewards. The public benefits from greater output of scientific knowledge, some of which has been perceived as more difficult to publish (e.g., studies with null or negative results).<sup>1,2</sup>

However, not all open-access journals are “mutualistically symbiotic” because the journal (or its publisher) may be the only party to see a benefit.<sup>3,4</sup> Designation of a journal as predatory by a community is based on a number of characteristics that have been described previously by others, including Beall,<sup>3</sup> Moher et al,<sup>4</sup> Shamseer et al,<sup>5</sup> and Clark and Smith.<sup>6</sup> One may argue that predatory journals capitalize on the immense pressure to publish facing all academics and scientists and provide an outlet through which anything can be published—whether innocently, deliberately, or simply indifferently on behalf of authors who want a manuscript “off their plate.”<sup>7</sup>

Between November 1, 2017, and November 30, 2017, 8 Cochrane Eyes and Vision @ United States (CEV@US) staff and faculty forwarded unsolicited e-mail invitations to publish eye and vision research to a common inbox. Two authors (J.T.L. and R.Q.) worked independently to extract information from each invitation and their associated journal websites. Data extracted include journal name, publisher, whether the journal was indexed in MEDLINE or in Embase (as of February 25, 2018), whether citations in the journal could be found in PubMed, whether the journals claimed a Journal Impact Factor (JIF), and whether

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the journal had published clinical trials and systematic reviews (the study designs that we were most interested in). We evaluated each unique journal and their website against the list of “Salient characteristics of potential predatory journals” proposed by Shamseer et al.<sup>5</sup> We resolved extraction discrepancies through discussion. Of note, PubMed citations come from MEDLINE-indexed journals, journals and manuscripts deposited in PubMed Central, and the National Center for Biotechnology Information Bookshelf. Therefore, it is possible that a specific journal is not indexed in MEDLINE, but manuscripts within the journal are available in PubMed.

Of the 42 unique journals that sent 120 unsolicited invitations to CEV@US staff and faculty, none is indexed in MEDLINE or Embase, 8 can be found in PubMed, 5 claimed a JIF, 5 have published at least 1 clinical trial, and 6 have published at least 1 systematic review. All manuscripts were published on the journal’s own website. We observed that all 42 journals publishing eye and vision research describe themselves as open access and peer reviewed. All 42 journals met the list of characteristics noted by Shamseer et al to some extent (Table 1). For example, the website of most journals contained spelling or grammatical errors (93% [39/42]), did not clearly provide information on how content will be preserved (83% [35/42]), and requested authors to submit manuscripts by e-mail (74% [31/42]). We highlight 3 areas to alert readers and authors of the ophthalmology and vision science literature.

### 1. Discoverability.

Not all open-access journals are indexed in a bibliographic database. Of the suspected predatory journals that solicited research from CEV@US staff, none is indexed in MEDLINE or Embase, 2 journal citation databases that readers frequently search.<sup>8–10</sup> Journals are not indexed in journal citation databases automatically, and selection is based on recommendations of a review committee that uses codified standards of journal merit.<sup>9,10</sup> Readers and authors should be aware that publications in nonindexed journals may be difficult to discover.

### 2. Preservation.

Publications in the journals we identified are all hosted on the websites of the individual journals. Because these journals are relatively new, we do not know whether the published material is archived robustly and reliably for the long term. Readers and authors should recognize that research published in defunct open-access journals, if unarchived, may not be retrievable.

### 3. Quality.

Risk of bias (an assessment of what is often considered study quality<sup>8</sup>) and the quality of how research is reported may be variable across journals. The suspected predatory journals that solicited research from CEV@US staff and faculty indicated peer review during handling of manuscripts; however, the rigor of this process is unclear. Comparison of the dates of submission with dates of publication may shed light on whether the journal may

accept manuscripts outright without formal peer review.<sup>4–6</sup> Bibliographic databases and curated lists also serve as useful references. For example, MEDLINE only indexes journals with an explicit process of external peer review, and Beall’s list is a compilation of “potentially, possibly, or probable” predatory journals.<sup>3</sup>

The genesis of open-access publishing has always been idealistic; research is meant to become more available and accessible to all readers. However, open-access publishing should not be confused with predatory publishing. Legitimately open-access journals do make knowledge widely available while upholding professional and ethical best practices of academic publishing.<sup>6</sup> Research published in predatory journals, however, may not be discoverable through standard searches or, when discoverable, may not be of sufficiently high quality to contribute to or improve clinical practice and understanding of the scientific underpinnings of clinical decision making.<sup>4–6</sup>

To guide readers in delineating potentially predatory from legitimate open-access publishing, Shamseer et al<sup>5</sup> recently developed a set of “evidence-based, salient features of suspected predatory journals” that could be relevant to the ophthalmic and visual science community (Table 1). In summary, readers should be wary when journals and publishers: (1) promise rapid publication without clearly describing the manuscript handling process, copyright and archiving policies, or retraction process; (2) solicit a broad or unfocused scope of research; (3) draw authors’ attention by promoting metrics such as Index Copernicus Values (a metric based on user-contributed data, which has been criticized for including predatory publishers) and low article processing charges; (4) use language targeting authors; (5) request manuscript submissions via e-mail; (6) use nonprofessional e-mail addresses; (7) use images that are fuzzy or distorted on their websites and publications; and (8) make spelling or grammatical errors on the journal websites.<sup>5</sup>

The intention to make research more publicly available is laudable. To achieve better health outcomes, evidence must be accessible and integrated into practice. Participants in research studies contribute their time, and funders expect return on their investments. Although there is value to disseminating research quickly and widely, the discoverability, preservation, and quality of research publications must not be compromised. Accordingly, to maximize the potential impact of research, authors must be mindful in selecting the journals to disseminate their work, and those who rely on published evidence must be cognizant of potential problems that may exist in the literature they use to inform their care.

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**Table 1.** Comparison of the 42 Ophthalmology and Vision Journals That Solicited Work from Cochrane Eyes and Vision @ United States Staff to the “Salient Characteristics of Potential Predatory Journals” by Shamseer et al

Characteristic	No.	%
The scope of interest includes nonbiomedical subjects alongside biomedical topics	29	69
The website contains spelling and grammatical errors	39	93
Images are distorted or fuzzy, intended to look like something they are not, or are unauthorized	16	38
The homepage language targets authors	20	48
The Index Copernicus value is promoted on the website	4	10
Description of the manuscript handling process is lacking	16	38
Request that manuscripts be sent in via e-mail	31	74
Rapid publication is promised	27	64
There is no retraction policy	27	64
Information on whether and how journal content will be preserved digitally is absent	35	83
The article processing or publication charge is very low (e.g., <\$150 United States)	1	2
Journals claiming to be open access either retain copyright of published research or fail to mention copyright	21	50
The contact e-mail address is nonprofessional and not journal affiliated (e.g., @gmail.com or @yahoo.com)	1	2