



Money down the drain: predatory publishing in the COVID-19 era

Dominique Vervoort¹ · Xiya Ma² · Mark G. Shrimme³

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Dear Editor:

For years, predatory journals have exploited authors by soliciting papers through email and social media, offering to publish articles open access quickly and with minimal review, often with a fee (Beall 2012). The publish-or-perish mentality in academia and barriers for researchers from low- and middle-income countries (LMICs) to publish led to a surge of predatory journals offering an easy way out (Forero et al. 2018). This conceals research from the scientific community, impeding scientific advancement and affecting authors' reputation. Upon receiving multiple requests from predatory journals to publish manuscripts related to the coronavirus disease 2019 (COVID-19), we assessed the scope of exploitative practices these journals engaged in by soliciting and publishing COVID-19 articles and earning off of vulnerable authors in a time where novel and accurate information is highly needed.

We analyzed journals listed by two predatory journal watchdogs: Beall's List and Stop Predatory Journals (Supplementary Material) (Beall 2020; Stop Predatory Journals 2020). Journals with inactive websites ($n = 484$) were excluded. Remaining journals ($n = 833$) were manually searched for articles published with variations of "coronavirus", "COVID-19", or "SARS-CoV2" in manuscript titles between January and May 2020. Articles were categorized as original articles, reviews, or commentaries/editorials per

journals' guidelines, and Article Processing Charges (APCs) were identified.

A total of 367 articles (125 original articles, 172 reviews, 70 commentaries/editorials) related to COVID-19 were published across 114 (13.7%) of the included journals. APCs were available for 92 (80.7%) of the journals that published COVID-19 papers. Authors were estimated to have paid US\$46,057.41 to publish in these journals. Seven (6.1%) journals reported zero APCs or other charges. Five journals had PubMed/MEDLINE indexing. When excluding these to account for some uncertainty, US\$33,807.41 was paid to publish 350 articles in the remaining 109 journals.

Our results are in line with previous evidence of unethical practices by predatory journals, including scripted mail invitations, smaller but additive publication fees—which disproportionately affect LMIC researchers—and sham reviews (Cobey et al. 2019; Shamseer et al. 2017; Van Noorden 2020). In the context of the pandemic, there are three major concerns:

1. Loss of potentially valuable biomedical and epidemiological information.
2. Spread of misinformation with potentially harmful or negligent consequences (e.g., some articles claimed efficacy of homeopathy).
3. Money earned off of unknowing authors in times where many scientists and clinicians have taken pay cuts.

It is noted that the definition of "predatory journals" is inconclusive and concerns exist regarding potentially non-predatory journals on these lists. Moreover, some fictional journals solicit articles via email but without available website, thus extending far beyond these lists. Last, predatory journals commonly negotiate APCs, which makes the true total value hard to quantify. However, our results give some insight into the scope of the problem.

These findings may inform academic databases to exclude metadata from predatory journals (Beall 2016). Authors ought to remain cautious about requests from unfamiliar journals, especially when their formats raise alarms (Forero et al. 2018; Wilkinson et al. 2019). A substantial amount of money

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✉ Dominique Vervoort
vervoortdominique@hotmail.com

¹ Johns Hopkins Bloomberg School of Public Health, 615 North Wolfe Street, Baltimore, MD 21205, USA
² Faculty of Medicine, University of Montreal, Montreal, Quebec, Canada
³ Institute of Global Surgery, Royal College of Surgeons in Ireland, Dublin, Ireland

and effort has gone down the drain as a result of journals leeching off of COVID-19. The academic community has the duty to respond to these deeply perverse practices, and thereby protect fellow researchers and combat misinformation.

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Compliance with ethical standards

Conflict of interest MGS serves on the Board of Directors for Pharos Global Health Advisors.

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