

REVIEW

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Predatory Open Access Journals are Indexed in Reputable Databases: a Revisiting Issue or an Unsolved Problem

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ABSTRACT

Introduction: Pseudo journals, hijacked journals, fraudulent journals, fake journals, and predatory journals waste valuable research when authors publish their studies in them. **Aim:** This article described novel suggested features for the identification of fraudulent journals and aimed to explain this issue to help inexperienced scientists avoid publishing in predatory journals. **Methods:** The articles related to this topic in were retrieved from PubMed and trustable Internet sources. **Results:** Unfortunately, some fake journals have made their way into reputable databases, such as PubMed, PubMed Central, MEDLINE, SCOPUS, and Web of Science; thus, the serious question has been raised regarding how we should address this problematic phenomenon. We recommended 28 suggested characteristics of predatory journals for readers to take into consideration. **Conclusion:** Unaware of the detrimental effects associated with publishing in disreputable journals, inexperienced researchers can fall victim to them. Together, as both readers and writers, we should completely boycott predatory journals.

Keywords: Predatory journals, Pubmed, Pubmed Central, Medline, SCOPUS, Web of Science.

1. INTRODUCTION

Today, the emergence of fraudulent scientific journals (called "predatory journals") represents one of the greatest threats to science (1-3). Many scientists, especially in developing countries, have fallen victim to predatory journals. Often, predatory journals protect themselves from being labeled as fraudulent journals and shield themselves from credible indexing or classification by various respectable organizations and governing bodies, facilitating their continued ability to prey on the science world (4). The majority of fraudulent journals are likely to be administered by a single person from a single computer. Such journals deliver bulk spam invitations to all writers, inviting the submission of publications for which they seek article processing charges (APCs) and specifically guarantee the approval and publication of manuscripts, without requiring the rigorous peer review procedures that are normally adopted by reputable, indexed journals, thus, jeopardizing the validity of biomedical research on behalf of reputable, indexed journals (5,6).

Predatory journals employ many strategies and techniques to appear respectable and draw the interest of young, naive researchers who would be eager to publish quickly, to achieve promotion. This practice of enticing researchers to publish valid work in predatory journals not only results in the tremendous loss of funds and precious resources but can also result in the loss of significant, validated studies that may have contributed breakthroughs to medical science progress. Most young and novice researchers, in addition to some respectable researchers, actively publish in fraudulent or fake journals, to develop their resumes and curriculum vitae, increasing their numbers of publications to obtain jobs, finance additional studies, and qualify for grants and promotions in academic careers (7-11).

It would be important to note that there were 81 Vietnamese authors who published their papers in a fake journal in 2019 (11). For instance, with the new regulations from government accompanied by the pressure of "publish or perish", professorship achievement, and career advancement, it is observed that some Vietnamese radiological researchers published papers in predatory

ry journals (7-11). Therefore, some medical researchers who may be aware of the unethical nature of a predatory journal may still be willing to publish in such journals, to meet the demands for publications (8, 9, 12-17).

While many scientists try their best to publish studies in the good quality journals indexed by reputable and the impressive metrics and databases, unfortunately, several predatory journals have begun to creep into credible repositories, such as PubMed, PubMed Central, MEDLINE, SCOPUS, and Web of Science; thus, how the academia addresses this troublesome phenomenon is a significant concern.

2. AIM

In this article, along with the description of novel potential features that can be used to identify fraudulent journals, we aimed to explain this issue in detail, to provide inexperienced scientists with the necessary knowledge to prevent the unwitting publication in predatory journals.

3. OPEN ACCESS MODEL AND THE ESTABLISHMENT OF PREDATORY JOURNALS

Authors who desire their articles to be more accessible to the public now have the option to pay out of pocket or to identify a funding source to help buy the copyright of their article from a traditional publisher. This allows the publisher to maintain quality control and remain profitable while simultaneously allowing the scientific work to be readily available to the community, through a process known as open access (OA). The OA model was established during the 1990s, accompanied by the development of high-speed Internet, and has become a strong trend, competing with the traditional model that requires readers to pay for access (Toll-Access, TA). OA journals have thrived, but OA changes the business model of a journal. In the traditional model, the readers are the customers, whereas, for many OA journals, the article author is the focus. With the OA model, publishing more articles results in OA journals generating more revenue from authors in the form of APCs (15,16). A "corrupt" form of the OA model has also emerged in the form of predatory journals, which encourage authors to pay APCs for articles but do not engage in a robust review process (1-6).

4. BOHANNON'S EXPERIMENT

A classic example illustrating the quality of a fake journal is the "experiment" performed by John Bohannon, which was published in *Science*, in October 2013 (17). For 10 consecutive months (from September 2012 to July 2013), Bohannon sent 304 different versions of a fake study he created to 304 OA journals. All of the articles were presented in the same form: the X molecule present in the lichen Y prevents Z cancer cells from growing. Bohannon disguised his identity by creating a database and using computer software to randomly generate the author's name, the name of the affiliated research institute, and the name of the magical lichen. Bohannon very carefully included very detailed and

false experiment descriptions and tables; he even used Google Translate to translate the articles into different languages and then back into English to ensure that the writing was not identical to the original version. His experiment showed that his articles were accepted by 157 journals, rejected by 98, and 49 journals did not have a conclusive response (29 did not respond and 20 said that they were still considering). Only 36 journals commented on the academic content of the article and, eventually, 16 of them accepted it. Bohannon's experiment also demonstrated that Beall's list of suspicious journals was rather precise (18). A total of 82% of the journals listed on the Beall List, after completing the review process, accepted the article.

5. ADVERSE OUTCOMES

Poor or missing review mechanisms in dishonest journals offer incentives for fraudulent work, utilizing fake, plagiarized, or distorted evidence, to reach the broader scientific community, which weakens the validity of the overall research focused on that subject. Predatory publications, therefore, pose a serious hazard to scientific research by providing an outlet for plagiarized and potentially false materials that would not otherwise be published by a peer-reviewed journal (12-14). Researchers can unintentionally construct their study activities on low-quality, immoral, or fabricated results, citing them in their own publications and further disseminating untrustworthy facts (12-14, 19, 20).

Legitimate publications are freely available via Web searches as written in fraudulent or pseudo-journals, but are incapable of being listed in the reputed network, rendering them useless for the science field and being unavailable to the wider scholarly community. These consequences can lead young researchers to lose enthusiasm and deprive them of the recognition that should have been their privilege. Often, these fake journals are intermittent in nature, as a consequence of continuously shifting website domains, resulting in the destruction of genuine and valuable publications that are lost to the scientific record (1-3, 12-14, 19, 20).

6. PREDATORY JOURNALS ARE INDEXING IN REPUTABLE DATABASES

The credibility and reliability of citation databases, such as PubMed, PubMed Central, MEDLINE, Scopus, and Web of Science, which we depend on as trustworthy research references, are now being called in question. Citation repositories are riddled with poor-quality publications in fraudulent journals (21-30).

An analysis of the indexing for 944 journals that have been categorized as likely to be predatory revealed that only 9 of these journals were indexed by the Science Citation Index Expanded (SCIE) database. Unfortunately, 28 of these predatory journals appeared in the Emerging Sources Citation Index (ESCI), and 56 journals were found in the Scopus database. Surprisingly, only 5 predatory journals appear in MEDLINE, and 3 are indexed by EMBASE (21). Manca et al. evaluated the bibliomet-

ric features of the potential predatory journals listed on Beall's list of predatory journals, in neurology and rehabilitation fields. The results showed that 14 of 87 neurology journals and 7 of 59 rehabilitation journals were indexed in the PubMed databases (25). In the critical care medicine field, Cortegiani et al. also discovered that 2 journals indexed on Beall's list also appeared in the Scopus database (26). In a previous report by Beall, the Journal of Current Research in Science, a questionable journal was found to allow up to 40% of plagiarized text in its articles and claims several completely fake impact factors. Surprisingly, this journal was indexed in ESCI (27).

Recent studies showed that PubMed, one of biomedical databases in the world, still contains some fraudulent journals and their publications are a major reason for concern. The stringent procedures and conditions required for the inclusion of a publication in MEDLINE are not enforced for inclusion in PubMed and PubMed Central. Consequently, PubMed and PubMed Central could well contain publications that have not qualified for inclusion in the MEDLINE database. Journals applying for inclusion in PubMed Central are not assessed by MEDLINE's Literature Selection Technical Review Committee. Furthermore, the journal title and the publisher name will not be considered crucial points during the evaluation process.

Predatory journals sometimes utilize journal titles that are very similar to well-known, prestigious journals and might, therefore, not be considered as fake. Subsequently, some predatory OA journals can leak into the PubMed and PubMed Central databases (21, 22, 24-29). Actually, in a previous study by Ross-White et al. on 459 predatory journals in the health and biomedical sciences, the findings showed that only 1 journal title was covered in MEDLINE database. There were 7 journal titles covered in Embase. It is also noticed that 9 of 10 journal titles indexed in bibliographic databases, acquired by the predatory publisher, were journals that had previously been published by prestigious scientific organizations. Furthermore, 39 journals with articles were cited in a systematic review or meta-analysis in PubMed Central (29). Thus, these problematic conditions raise the serious question of what measures should be enacted to avoid publishing in predatory journals, especially when some of them have successfully attained indexing in reputable databases (30).

7. SUGGESTED FEATURES OF PREDATORY JOURNALS

We suggest that the following features define predatory journals and can be used to identify suspicious journals when both submitting articles for publication and reviewing published articles (30-33).

- Accepts articles very quickly, usually without independent criticism or quality control measures, even for articles with irrational content.
- Peer review process is completely fast and inefficient without constructive comments.

- Rapid publication.
- Only notifies the author of the existence of APCs after the paper has been accepted, APCs that are unclear, or APCs that can be negotiated after acceptance.
- Actively sends unsolicited or bulk spam emails to invite article submission for upcoming issues or special issues or requests participation in editorial boards or as journal reviewers.
- Adds scientists to an editorial board without permission and refuses to remove them from the editorial board.
- Unqualified international scientists on the editorial board (uncheckable ORCID ID and/or RESEARCH ID).
- Although publishers claim to be leading or top publishers with very impressive impact factor or CiteScore, they are just starters.
- Uses a name or website design that closely resembles an existing prestigious journal.
- Presents a fake impact factor, metrics, databases, or having none available.
- The journal website contains grammar and spelling errors.
- Images and logos on the front page appear amateur, distorted, and fuzzy.
- Unclear procedures for handling manuscripts and journal workflows.
- The website requests that the manuscript be submitted via a personal email account.
- Published articles are unprofessional with linguistic typos.
- Published articles are outside the aims and scope of journals.
- Each published article will have a unique digital object identifier (DOI); nevertheless, it can not be checked at <https://www.doi.org/>
- Journal titles are different from the journals' aims and scope.
- Journal titles are very unfamiliar with you and your colleagues.
- New OA journals are often established with an address in European countries or the United States of America with a ringing name such as "American journal of..."; or "European journal of ...", or "International journal of ...".
- Journal titles simultaneously combine two or more distinct fields such as "Journal of Medicine, Dentistry, and Pharmacy" so as to lure more papers and earn more revenue from APC.
- No information regarding where and how articles will be digitally conserved is provided.
- No withdrawal or retraction policy is outlined.
- Journals do not use well-known softwares against plagiarism and there is no legal action for plagiarism.
- Journal website posts non-academic and non-related advertisements which are mostly connected to publishers' conferences.
- Fraudulent placement of the Committee on Publication Ethics (COPE) logo on the journal website, without belonging to COPE.

- The "International Standard Serial Number" (ISSN) of an OA journal cannot be verified in the Directory of Open Access Journals (DOAJ) and/or The Directory of Open Access Scholarly Resources (ROAD).

- Falsely claims indexing in various reputed databases, such as PubMed, PubMed Central, MEDLINE, SCOPUS, and/or Web of Science.

These characteristics can be used to flag potentially untrustworthy publications and may be especially useful for novice researchers who are not yet familiar with the differences between reputable journals and predatory journals.

Also, Editors and Reviewers of the submitted papers need to keep respect of the journal and check all methodological elements in assessment of the quality of the submitted papers, especially of the used correct statistical analysis and presentation of the results, trying to keep the scientific truth in medicine (30-34).

Every review must be based on the scientific proofs and arguments like on original proofs in research's results described in articles which reviewers assessed and evaluated during the review process (32, 34).

8. CONCLUSION

The prevailing scholarly ethos of "publish or perish" and the OA model have combined to contribute to the present state of affairs. Prior to new submissions, researchers can decide whether the journals they submit their papers to are trustworthy, not only by making use of 'blacklists', such as Beall's list that list potentially predatory journals, but also by carefully evaluating the characteristics of each journals' DOAJ, ROAD, and COPE registries and the available indexing on reputable databases, such as PubMed, PubMed Central, MEDLINE, SCOPUS, and/or Web of Science.

These evaluations should be performed on the official websites of the databases and registries, instead of relying on the claims of the journal. To avoid potential predatory journals, researchers should consider some of the suggested features of predatory journals described in this study. Together, as both readers and authors, we should fully boycott fake journals.

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