

What should urologists know about Pseudojournals and open access publishing? A narrative review of the literature

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ABSTRACT

Introduction: The majority of the open access publishing allows the researchers to publish their articles for a fee and at the same time enables the readers to access the research without paying the expensive journal subscription charges. Under the garb of open access publishing, predatory journals run a scam to dupe the researchers of money. This study was conducted to highlight the characteristics of pseudojournals and increase the awareness about their modus operandi.

Methods: The email inboxes of 3 academic urologists (APS, AS, and KP) were searched for emails soliciting articles for open access journals. A list of all such journals was compiled. These journals were checked for metrics from the Journal Citation Reports and the Scimago Journal Rankings. All these journals were then cross-checked with the available whitelists and blacklists. Features pointing toward a pseudo journal were identified as red flag signs for these journals and were noted. A literature search was performed on open access publishing and predatory journals, and the salient points were noted. A checklist of red flag signs was compiled.

Results: A total of 71 emails soliciting article submissions from 68 journals were received by the three urologists (APS, AS, KP). Of these, 54 were highly suggestive of being a pseudojournal, 5 journals were operating in the gray zone between genuine open access journals and outright predatory journals, and 9 were genuine open access journals. A total of 33 articles on predatory journals were reviewed after the literature search as per the PRISMA guidelines. The red flag signs identified along with the literature review were used to create the SAFEiMAP checklist, which can be used to identify predatory journals.

Conclusion: Predatory journals have infiltrated the whitelists, and the indexing databases like PubMed and no blacklist is all-inclusive. Understanding the concept and the types of open access publishing gives the researchers a better idea on how to differentiate fake journals from the genuine ones. Using a checklist will help to identify the red flag signs of such journals and identify those journals that operate in the gray zone.

INTRODUCTION

In the present academic landscape, publications are one of the major criteria for both job and promotional interviews in academic institutions. This demand, along with the desire to collect “Pubcoins,” has led the researchers to fall easy prey to the predatory

journals or pseudojournals as they are sometimes called. Grudniewicz *et al.* defined predatory journals as entities that prioritize self-interest at the expense of scholarship and are characterized by false or misleading information, deviation from the best editorial and publication practices, a lack of

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transparency, and the use of aggressive and indiscriminate solicitation practices.^[1] In simpler terms, these journals allow one to publish or solicit publications, often in exchange for money, in the absence of a credible or legitimate peer-review process.^[2] Open access publishing allows the researchers and scholars who cannot afford journal subscription charges an access to the literature. This approach of open access publishing continues to adhere to the high standards of scholarly excellence while generating higher citation levels than the standard publications.^[3,4] It is worth noting that almost 11% of the world's articles were being published in the open access journals by 2011. As of 2016, the Directory of Open Access Journals had added more than 500 journals in the first quarter itself, at a rate of almost six titles per day.^[5] Predatory journals exploit this approach of open access publishing and target researchers who want to get their work published or to reach a wider audience at a quicker pace.^[6]

Indexing of a journal in a reputed search engines such as PUBMED, Scopus, Embase or Web of Science is one of the criteria to consider a journal as non-predatory. There are blacklists documenting predatory journals, but these lists are not all-inclusive.^[7-9] In the field of urology, Woo *et al.* have published a "Urology Greenlist," which includes 58 legitimate journals at the time of this writing, but falls short in including many of the non-predatory journals.^[10] UGC CARE list is another such whitelist, meaning a list containing names of journals that have been verified to be genuine journals with a genuine publisher and a peer review process.^[11] None of these criteria, though, are entirely foolproof. Predatory journals continue to evolve to appear genuine and to avoid being blacklisted. These predatory journals have infiltrated many indexing databases and whitelists. In this article, we have discussed the concepts of open access publishing and the characteristics and the extent of the problem of predatory publishing.

MATERIALS AND METHODS

This review was performed in two parts. First, we enlisted three urologists involved in academia, and the email inboxes of these urologists (APS, AS, and KP) were searched for a period of 6 months from July 2020 to December 2020 for emails soliciting articles for open access journals. Only those emails requesting for articles in the English language were selected. These journals were checked for metrics from reputed journal indexing sources, including the Journal Citation Reports and the Scimago Journal Rankings (SJRs).^[12,13] All these journals were then cross-checked with the two white lists, namely the Urology Greenlist and the UGC CARE India whitelist for inclusion. All these journals were then cross-checked with the three well-known blacklists, namely Beall's blacklist, Cabell's blacklist, and Strinzel's blacklist.^[7-9]

In the second part, we ran a systematic search on the three databases, PubMed, Embase, and Scopus, using the keywords

"Predatory journals," "Open Access," and "Urology," using the operator "AND." We followed the Preferred Reporting Items for Systematic Reviews and Meta-analysis guidelines during this search and reviewed the results. The last search was performed on 12th October 2021. The references of these articles were searched for relevant articles. Initial search yielded 21 articles. After checking for duplicates and excluding the abstracts and commentaries or responses, we were left with 3 full-length articles. Additional 11 articles were selected from the references of these three articles. We then researched the various types of open access publishing, and relevant references were included. A thorough online search on the concepts and principles of PubMed and the Committee on Publication Ethics was also performed. A total of 33 relevant articles were then reviewed. After going through the particulars of all the journals, we had listed in the first part, and after reviewing the literature yielded by our search results, we then recorded the red flag signs of these journals. Based on these red flag signs, we created a checklist that can be followed to identify a predatory journal before submitting research articles for publication. We have also presented a narrative literature review on the key points of open access and predatory publishing and discussed the ways to overcome this problem.

RESULTS

A total of 71 emails soliciting article submissions from 68 journals were received by the three urologists. The list of journals from which the soliciting emails were received and their characteristics have been mentioned in Supplementary Table 1. Previous articles on this topic, that have openly named such journals and publishers, have often faced uninvited legal action. To avoid this, the names of these journals and their publishers have been withheld and replaced with codes. Of these, 54 journals had the characteristics suggestive of pseudojournals, 5 were operating in the gray zone between genuine open access journals and outright predatory journals, and 9 were genuine open access journals with a genuine peer review process. None of these journals were included in the Urology Greenlist. SAGE journals were listed as the genuine publisher of open access journals. We also accessed the latest UGC CARE-approved journals list. A careful search of the journals in the index showed that none of the titles included in our results were included in the above lists. Interestingly, none of the journals in our list were included in the three blacklists either. After going through the above and after reviewing the relevant literature, we identified the red flag signs that point towards a journal being a predatory or pseudo journal and grouped them under eight specific headings: submission website and process, affiliations and specialties, fees, editions and availability, Indexing, Metrics, Access and Publication, and peer review process (SAFEiMAP). These red-flag signs have been enumerated in Table 1. This table and its contents can be used as a checklist (SAFEiMAP checklist) to guide

Table 1: List of red flag signs that point toward a journal being a predatory journal

Name	Aspect	List of red flag signs
S	Submission website and process	<p>Name of the publisher appears unfamiliar</p> <p>Particulars of journal webpage: Poorly maintained, not updated, technical glitches</p> <p>Date of creation, name of the editor/editorial board, and their contact details may not be displayed. In its place, there may be a gallery of a collection of photographs of people with their names and place of work without any contact details. Many of these people will be found to be researchers in unrelated specialties on searching online. Sometimes, paramedical researchers are listed as reviewers and editors of medical journals. Genuine open access journals generally do not have such galleries of photographs</p> <p>Contact details absent, nonaffiliated email or weblinks, for e.g., @yahoo.com, @gmail.com. Phone numbers may be displayed but are not reachable or not in service</p> <p>Language errors or grammatical mistakes</p> <p>Name of website includes 3rd party names like name of the domain merchant</p> <p>Instructions of submission and author guidelines vague and brief with margin for error</p> <p>Rules for referencing lax and vague</p> <p>Declarations of adherence to ethical standards missing along with promotion of ethical clearance, permissions, and declarations of conflicts of authors</p> <p>Emails to authors soliciting articles are a red flag sign. Often the emails refer to a previous work of the author on an unrelated topic while inviting submissions for another field. Sometimes, the previous works like case reports or commentaries will be referred to as cutting edge original research in these soliciting emails</p> <p>Language of the soliciting email is flowery and flattering</p> <p>Quality of images in the webpage will be bad and pixelated or unrelated to the topics purportedly covered in the journal</p> <p>Submission process does ask for title page, cover page, tables, etc., to be submitted separately and the author may be asked to just email the document as a single file, allowing for a large margin of error</p> <p>Does not ask for ORCID or Researcher ID</p> <p>Details of retraction policies absent</p>
A	Affiliations and specialties	<p>Affiliation to any regional, national, or international society missing</p> <p>Name of the journal may be very similar to that of an established journal</p> <p>Articles published will be pertaining to multiple specialties without well-defined aims and objectives</p> <p>Topics may deal with even paramedical, veterinary, or even nonmedical areas of research such as zoology and botany and sometimes even economics, engineering, and fine arts</p> <p>Address, contact details, and particulars of the affiliated society, if mentioned, are not clear and verifiable</p> <p>Phone numbers, WhatsApp numbers, fax numbers given as modes of contact are red flag signs</p>
F	Fees	<p>APCs are too less. Usually, APCs of genuine open access journals are more than 1500 USD, while those of predatory journals are usually around 100-500 USD</p> <p>Time-bound discounts and offers on APCs</p> <p>Variation of fees with regards to type of article and timeframe of submission</p> <p>Transparency of payment process absent.</p> <p>Payment gateways using 3rd party applications and websites</p> <p>Retraction fees, fees for the reproduction of colored images are not mentioned</p>
E	Editions and availability	<p>Either print or online editions or both are not available</p> <p>Archives absent or not arranged into editions and issues. If present, then missing proper table of contents and editorials</p> <p>There is no arrangement of the articles in a particular order or into subgroups such as original articles, review articles, and case reports</p> <p>Very few articles in each issue are a red flag sign</p> <p>The pages of the articles are missing page numbers</p> <p>The language of the articles will be showing errors of grammar, syntax, and typesetting</p>
i	Indexing	<p>Not indexed in Medline, Embase, WOS, ESCI</p> <p>Claims to be indexed in no specific academic databases such as Google scholar, Publons, and YouTube</p>
M	Metrics	<p>Not included in Scimago, journal rankings, journal citation reports, DOAJ</p> <p>Thomson Reuters impact factor not displayed</p> <p>Sham indexes like Copernicus factor may be displayed</p> <p>Very high impact factor displayed is a red flag sign</p>
A P	Access Publication and peer review	<p>Type of open access not mentioned</p> <p>Time taken to publication is promised to be very short</p> <p>Review of articles in the archives would show short and almost identical time taken from submission to final publication, usually around 3-4 weeks, unlike genuine open access journals which usually take a longer time due to the genuine peer review process</p> <p>Poor quality of peer review - comments on the subject with critical appraisal missing or acceptance at the first submission without any changes advised</p> <p>Updates about review process - whether emails, SMS, or WhatsApp updates</p> <p>Permission for copyright not mandatory</p> <p>Quality of reproduction of text, typesetting, and images would be poor</p> <p>Ahead of print articles may not be available</p>

APCs=Amount of article processing charges, DOAJ=Directory of Open Access Journals

the authors to distinguish a genuine open access from a pseudojournal. Listing the shady characteristics of such

journals will also help in identification of most of such pseudo journals that operate in the gray zone between the

genuine and predatory journals. Authors can use the same before being duped by these pseudojournals. However, it must be clarified that the checklist is just a tool to help the authors identify the predatory journals and does not label any journal as predatory unconditionally.

DISCUSSION

The idea behind open access publishing, though noble, has spawned an exploitative model of business called the predatory publishing. It promises the author a rapid review process and fast-track online publishing, all for a fee, termed as article processing charges (APCs). This may appear as an easy and attractive option, however, there is more to this process than meets the eye. Instead of providing the editorial and publishing services associated with other genuine journals (whether open access or not), these journals are instead a financial scam, wherein they rope in substantial profits while spending next to nothing. More importantly, they tarnish the image of legitimate, open access journals and dilute the quality of evidence-based medicine, and the overall quality of science. They also lead to an inflated record of academic publications, which may not hold true under proper scrutiny. It undermines months and sometimes years of hard work, and any article published without accurate, critical analysis is a potential tool for propagating incorrect information. Citations of such articles, especially by those who do not recognize the nature of such journals, creates a vicious cycle of misinformation, which continues to propagate.

Characteristics of predatory journals soliciting articles

It is practically impossible to create a comprehensive list of predatory journals. As noted in the results, none of the journals were enlisted in either of the greenlists or the black lists except the SAGE Journals. This creates a

problem for the authors in utilizing these lists. Apart from the points listed in Supplementary Table 1 and Table 1, a few more characteristics of pseudo-journals are worth noting. A predatory publisher may have more than one predatory journal seeking articles. Sometimes, these journals have names that sound similar to the established genuine journals. Another critical area where the authors may be misled is indexing. These journals claim to be indexed in PubMed, but more often than not, they are not. They can still be predatory even if they are, as discussed in the following sections. Furthermore, prominently displayed images saying “Indexed in Researchgate, Google Scholar, ORCID, Publons, CrossRef,” etc., does not make them genuine because these are not indexing databases, and all the researchers should understand this critical point. Finally, sometimes, these journals send out invites to become reviewers for them. During our analysis, we found the names of many prominent, well-known researchers in the field of urology, including two of our authors, on the editorial boards of a few of these journals. On contacting them, we found out that most of them were unaware of the menace of predatory publishing or the nature of the journals using their names as editors.

Concept and types of open access publishing

The idea of open access publishing was adopted for rapid and affordable dissemination of scientific literature.^[14] We have listed the main types of open access publications and their meanings in Table 2.^[15-22] Predatory publishers provide a cheaper option in the form of lower APCs than the genuine open access journals. These publishers promise quicker “preprints,” and anyone can be misled into thinking this means faster publication.^[23] It must be stressed here that preprints have not undergone a peer review and can be made accessible to the public before the review process at the author’s discretion using Researchgate, BioArxiv, MedArxiv,

Table 2: Types of open access publishing

Type	Definition
Gold ^[14]	In this type of open access, the journal may choose to take APCs from the author and after peer review and publication, the article is freely available on the internet and anyone is free to download and read it. Such journals allow unrestricted access to all the articles in their archives
Hybrid ^[16]	In this type of access, the journal publisher offers the option to the author of choosing to pay APCs to make his/her research freely available after acceptance and publication or to not pay APCs and make his work accessible to readers only through subscription or institutional access
Green ^[15]	In this the journal, publisher allows the author to self-archive research articles in institutional repositories and then provide free access to their own work through the archives. From this independent repository, people can download the content free of cost. This type of open access is author specific and the reader may not be able to access all the articles included in that journal
Bronze ^[17]	These articles are free to read on the publishers page but cannot be downloaded and reused, due to the lack of a clearly identifiable license
Diamond or platinum ^[18,19]	This is a type of open access publishing with free and unrestricted access as in gold open access, but the publisher does not charge any APCs from the authors
Black ^[20]	Unauthorized copying of digital content and its dissemination either through social media sites (for e.g., the ICanHazPdf) or through dedicated websites like Sci-Hub. This is a rather large scale implementation of the practice in which someone with access to paywalled literature would download it and disseminate it among his contacts
Libre ^[21]	The paper is made available under an open licence allowing it to be shared and reused
Gratis ^[21]	In this type of open access, the paper in the journal is free to read. However, sharing and reuse are not permitted and are protected by copyright

APCs: Amount of article processing charges

etc., In addition, the predatory journals perform a sham reviews, push the reviewers to accept articles against their will, and promise a considerably short time to publication.

How do predatory journals compromise indexing and citation databases

What is PubMed? There are actually three terms researchers need to be familiar with Medline, PubMed, and PubMed Central (PMC). The National Library of Medicine (NLM) maintains both the PubMed and the MEDLINE.^[24-26] Now, any author whose work was funded by the National Institute of Health (NIH) or any other similar funding agency will have to submit their articles to PMC, which will be made visible to all for open dissemination. In a situation when such work was ultimately submitted to a predatory journal, a PubMed search would also reveal this article included in the search, giving a false impression of a PubMed “indexed” journal. While only about 5600 journals are indexed in the MEDLINE, about 30000 journals are included in the PubMed. This is because of the less stringent criteria for inclusion in the PubMed. Indexing in PubMed requires an ISSN number, which is easily obtained, a 2-year history of publication, and a minimum of 25 peer-reviewed articles.^[27] This is followed by a 6 step procedure (Submit Application, Initial Application Screening, Scientific Quality Review, Technical Evaluation, Pre Production, and Release to Live).^[28] The pre-application phase looks for conformance with the guidelines by professional organizations such as the Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals from the International Committee of Medical Journal Editors, Principles of Transparency and Best Practice in Scholarly Publishing, and the Recommended Practices for the Presentation and Identification of E-Journals from the National Information Standards Organization.^[29-31] However, this process is not always uniform. Some journals may be less than two years old and have less than 25 articles listed on their archives, and are indexed, which can be easily verified by searching the journal’s or publisher’s name in the NLM’s catalog (www.ncbi.nlm.nih.gov/nlmcatalog/). However, the NLM may consider an application from such a journal only if the editorial board members and management have an adequate experience in ensuring the editorial quality in similar positions in the past. To exploit this loophole, predatory journals often list the names of reputed researchers in their list of editorial board members. Most of the time, these individuals are unaware of their names being used for this purpose.^[32] This also explains the barrage of emails many researchers receive daily, asking them to join the editorial boards journal they have never heard of. An academic sting operation published by Sorokowski *et al.* demonstrated how a fake polish researcher with a phony name of “Anna O. Szust” (translation: “Dr. Fraud”) was made the editor of 48 predatory open access journals and the editor-in-chief of 4 such journals by submitting a fictitious resume.^[32] Finally, for the less stringent assessment

for inclusion into the PMC, in the absence of any evaluation from MEDLINE’s Literature Selection Technical Review Committee, the journal’s title and publisher’s name are not double-checked with the lists of directories of the NLM.^[30] Predatory journals often register their names very similar to the established legitimate journals and may not be recognized as fraudulent. As a result, open-access journals that do not qualify for inclusion may be indexed in PMC and may subsequently “leak” into the PubMed database.

The magnitude of the problem

A recent study by Moher *et al.* examined 2000 articles from over 200 suspected predatory journals. More than 50% of the corresponding authors belonged to the high-and middle-income countries.^[32] A significant proportion of these articles published research funded by NIH and therefore were automatically indexed in the PubMed. According to this study, reputable universities such as Harvard, Massachusetts, University of Texas, and Cambridge were among the top 8 contributors of articles to such journals. Approximately 8000 predatory journals publish about 400,000 articles every year. Therefore, contrary to the popular notion, the problem of predatory publishing is not limited only to the low-income countries, specifically India.

How to tackle this problem?

Understand the concept of open access publishing and predatory journals

Every urologist inclined toward academic publishing should clearly understand the various types of open access publishing and the meaning and the importance of a legitimate peer review system. Any publication or journal seen on PubMed should first be cross-referenced with MEDLINE. However, this process may exclude some established reputed journals like our own Indian Journal of Urology, which is still not MEDLINE indexed. Hence, this should not be the sole criteria to consider a journal as genuine.

“Blacklists” and “Whitelists” are not all-inclusive

Blacklists and whitelists can never be all-inclusive. Predatory journals are like the heads of the Hydra. Cut one-off and two more will grow in its place. The list compiled by Jeffrey Beal, now replaced by www.predatoryjournals.com, has grown exponentially over the years. At the same time, whitelists like that of UGC CARE have been infiltrated by many predatory journals. Strinzel *et al.* showed that there is considerable overlap between whitelists and blacklists because these lists use easily verifiable criteria to group journals into predatory or genuine. Like genuine researchers, scammers have access to these lists through the internet, and they evolve, spawning more predatory journals, which are even more challenging to identify. Many such journals operate in the gray zone between fraud and legitimacy and are likely to be included in both kinds of the lists. Identifying such journals without an over-reliance on such lists is the key.

Role of a mentor

An experienced senior author or co-author could guide a young author. Being experienced in peer review, their experience would alleviate the fear of rejection and the feeling of frustration and impatience that accompanies the process of contemporary academic publishing.

Use of a checklist

A recent meta-analysis reported 93 checklists which are being used to check for predatory journals.^[33] The contents of most of these checklists are similar, and most of them can reliably identify the predatory journals. The checklist of red flag signs we have compiled is similarly helpful with its easy-to-remember acronym. This checklist does away with the need to check for the inclusion of any journal in the various whitelists or blacklists. Therefore, every researcher should make use of at least one such checklist before submitting their work.

Identifying gray zones

It is imperative in determining those journals that operate in the gray zone between genuine and predatory publishing. Indexing and citation databases like UGC CARE whitelists and PMC have been compromised. In the list of journals we have compiled, quite a few journals have well-maintained websites, archives, and submission processes. Some of these journals even publish conference proceedings to appear genuine. However, these conferences are more often than not sham conferences, and a thorough online search will reveal their fictitious nature.

Responding to invites

Be cautious when you see an invite to be a reviewer in your inbox. Most genuine peer-reviewed journals get their submissions reviewed by experts chosen after years and years of research in that field. More often than not, these predatory journals will use the researchers' acceptance of their invite as an excuse to use their names on their website to appear genuine, without actually getting any submission reviewed by them.

What can institutions do?

Coordination between genuine publishers, research institutions, and funders to bring out a cohesive set of rules on publication is the need of the hour. The number of funds given to researchers by the institutions can be increased so that they can afford genuine open access journals. Ethical committee meetings should explicitly state that publications in predatory journals is not allowed, leading to forfeiture of the allotted funds. Research institutions should make earnest efforts to educate students, faculty, and researchers on this issue and should regularly audit where the articles from the institute are submitted for publication. Furthermore, each institute should mention that publications in predatory journals will not be considered contributory towards faculty appointments or promotions.

CONCLUSION

No whitelist or blacklist can help in reliably identifying a predatory journal. Understanding the concept and types of open access publishing work gives a better idea of how to differentiate fake journals from the genuine ones. In addition, using a checklist like the one proposed by us (SAFEiMAP checklist) may help in identifying pseudojournals and those operating in the gray zone. Authors need to treat every invitation to submit their research, with caution. The predatory journal menace is here to stay and the biggest weapon against it would be increased awareness among us.

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