How to find a predatory journal: prevent yourself from getting scammed

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Abstract

Predatory journals are threat to the integrity of scientific research publication. Jaffrey Beall defined predatory journals and created Beall’s list of predatory journals. Predatory journals exploit the open-access model - they are dishonest and lack transparency. Predatory journals fully developed in the years 2013 and 2014. Developing countries are mainly victimized by such journals. Predatory journals are also found in reputed repository databases like PubMed, Medline, Scopus, Science Citation Index Expanded (SCIE), Emerging Sources Citation Index (ESCI), and EMBASE (Excerpta Medica dataBASE) to name a few. There are numerous fake profiles on Facebook, LinkedIn, Twitter, WhatsApp, and Google; although they have been timely deleting such fake profiles. Use of institutional email addresses are helpful to maintain quality. Focusing on quantity over quality of research papers, and lack of proper knowledge about predatory journals make researchers victimized by such predatory journals. This mini-review aims to provide knowledge about predatory journals and tips to prevent genuine researchers from getting victimized by such journals which often use fake social media accounts and email addresses.

Keywords: Beall’s list, fake, phishing, predatory journal, scam

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Introduction

The definition of “Predatory Journals” remains ambiguous. Jaffrey Beall - an academic librarian at the University of Colorado in Denver, coined the term “predatory publishers”, and defined it as “organizations that publish counterfeit journals to exploit the open-access model in which the author pays. These predatory publishers are dishonest and lack transparency. They aim to dupe researchers, especially those inexperienced in scholarly communication.”

Many researchers, especially beginners from developing countries are victimized by such journals. This review article aims to provide knowledge about predatory journals and deliver useful tips to prevent genuine researchers from getting victimized by such journals. This paper also discusses the possible fake social media accounts and email addresses used by such journals, and the importance of institutional email addresses.

Method

For writing this review, we searched articles in PubMed, Google Scholar, and Google using various combinations of the following terminologies; “Predatory”, “Fake”, “Journal”, “Scam”, “Fraud”, “Victim”, “Social media”, and “Open access” from January 2012 to April 2022. All the important information was tabulated in Google Document, analyzed, and only selected information was chosen to be included in the review. The obtained information was then categorized into several subjects and summarized. Microsoft Excel 2019 was used to tabulate the findings.

Findings and Discussion

Beall’s List
Jeffrey Beall prepared a list of predatory journals which is scholarly known as “Beall’s List”. He submitted a low-quality article to 304 different Open Access journals. The article contained numerous errors that a skilled peer reviewer would easily identify, but more than 50% of the journals accepted the article. He concluded that only superficial peer review processes were performed and those articles were sold as ‘scientific’. He found out that journals belonging to well-known publishers, such as Elsevier, Sage, and Wolters Kluwer, also accepted those articles which made it obvious that journals belonging to well-known publishers, such as Elsevier, Sage, and Wolters Kluwer, also accepted the bogus article. However, many researchers have criticized and examined Beall’s list using different methods.

Similar to Beall, John Bohannon conducted an experiment where he sent different versions of a fake study to different journals. He reported that his fake articles were accepted by 157 journals, rejected by 98, and 49 did not have a conclusive response.

While, a vanity press is a type of publishing where there is no peer review, editing, or quality control. Unlike predatory journals, they are legal businesses that target young inexperienced academics to publish their work on a contract basis for free and reserve the right to publish it.

How to recognize predatory journals
Out of many, there are some useful criteria to identify a potentially predatory journal, designed criteria, Table 1.

A study that included 93 predatory journals, 99 open access, and 100 subscription-based journals showed that the majority of predatory journals contained spelling errors (66%), low quality, and unauthorized images (63%); compared to open access journals (6% and 5% respectively), and subscription-based journals (3% and 1% respectively). About one-third (33%) of the predatory journals promoted a bogus impact metric - the Index Copernicus Value, while only a few (3%) of open access journals and none of the subscription-based journals had such issues. Similarly, about three-fourths (73%) of the predatory journals had editors or editorial board members whose affiliations were not verified with journals, while very few open access journals (2%) and
subscription-based journals (1%) had such problems. While analyzing the publication fee, predatory journals charged comparatively lower fees (median USD 100) as compared to open access journals (USD 1865), and subscription-based hybrid journals (USD 3000).7

Table 1. Criteria to suspect predatory journals (modified from3)

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer review</td>
<td>No peer review or just superficial peer review is done</td>
</tr>
<tr>
<td>Emails</td>
<td>Numerous flattering emails are sent to a large group of people to lure the researchers to submit papers</td>
</tr>
<tr>
<td>Advertising</td>
<td>Rapid publication time/rapid review processes, and low submission fees are mentioned</td>
</tr>
<tr>
<td>Publication fees</td>
<td>Publication fees are usually hidden and only revealed after the paper has been accepted for publication</td>
</tr>
<tr>
<td>Title and logo</td>
<td>The journal’s title can be misleading, sometimes they clone the name from prestigious journals; also, the journal’s logo can resemble that of a well-known journal</td>
</tr>
<tr>
<td>Editors</td>
<td>Fake editors or even the names of honorable researchers are mentioned without their permission</td>
</tr>
<tr>
<td>Metrics</td>
<td>False impact factors and ‘fake metrics’ are mentioned</td>
</tr>
<tr>
<td>Contact information</td>
<td>Invalid contact information (email, contact number, and address) is provided so that the publisher can’t be inquired about; email addresses from public providers like Yahoo, Gmail are frequently used</td>
</tr>
<tr>
<td>Scope</td>
<td>The journal’s scope is not specific - various fields of Science are covered</td>
</tr>
<tr>
<td>Publishing ethics and standards</td>
<td>Ethics of research and publication are violated - proper reviewing, editing, and indexing are not done</td>
</tr>
<tr>
<td>Indexing</td>
<td>The articles are claimed to have been indexed in reputed databases such as PubMed and Web of Science; in fact, no such indexing is done</td>
</tr>
<tr>
<td>Copy-editing and spelling errors</td>
<td>The articles published in predatory journals are poorly edited- they contain numerous grammatical and typographical errors; those errors are found on the journal’s website too</td>
</tr>
<tr>
<td>Submission system</td>
<td>Emails are provided for manuscript submission, instead of a reliable manuscript submission system</td>
</tr>
</tbody>
</table>

Analysis of information from 1015 editors taken from journals listed in Beall’s list concluded that it is not possible to identify predatory journals by checking their editorial boards only. Predatory journals include all types of profiles as their members of editorial boards (MEBs) - which include fake and unqualified persons, but mostly high-profile researchers without their permission. The MEBs were from 74 different countries of the world - the United States of America (44.4%) being the highest. The median of publications per editor was 43, the number of citations 664, and the h-index 14. Hence, they advised
authors to directly contact the editors if they suspect a journal is predatory. 8

Another study that analyzed 55 open access Emergency Medicine journals showed that one of the major criteria to find out a predatory is the absence of indexing in any recognized reference index. About 25% of those journals were not included in any index, so they were highly suspicious of being predatory. However, newly established journals, though legitimate, may not be found in recognized indexes (e.g., Japanese Journal of Trauma and Emergency Medicine, an inactive title last published was in 2012, and Emergency Medicine and Health Care). 8

A study showed that numerous checklists have been designed to identify predatory journals. Such checklists have increased since 2012, among which the majority (87%) have been designed since 2015. Surprisingly, the study found that one of the checklists was itself published in a paper in a potentially predatory journal. 9

knowledge regarding predatory journals
Several studies were done in different countries regarding prior knowledge about predatory journals among researchers (Figure 1). 3,10,11  A questionnaire-based study among 286 dermatologists in Austria revealed that 84(29.4%) participants knew how to identify predatory journals and 202(70.6%) did not know about it. 3 Another questionnaire-based study conducted among 263 fourth and fifth-year medical students of two medical colleges from the Kingdom of Saudi Arabia (KSA) and New Zealand (NZ), found that only a few participants from both countries had awareness regarding predatory journals (9.1%, n=18/198 in KSA, versus 7.7%, n=5/65 in NZ).10 Similarly, another online survey conducted by the German Society for Orthopedics and Trauma Surgery (DGOU) among 291 orthopedic and trauma surgeons revealed that about 116(39.9%) participants were aware of predatory journals.11

Figure 1. Studies done in different countries of the world showing the percentage of participants who had prior knowledge about predatory journals

Victims
A study done in Italy regarding the incidence of predatory journals in Computer Science literature between 2011 and 2015 found that the percentage of papers published in predatory journals increased over the years, until 2014; however, a strong decrease was observed in 2015 compared to 2014. The study revealed that the phenomenon of predatory journals fully developed in the years 2013 and 2014.12
Nigeria is the second country in the world to have the highest number of publications in predatory journals. Similarly, a study found that there were 81 authors from Vietnam, who published in predatory journals in 2019.

The Journals in Nepal
In Nepal, there are 256 journals listed in NepJOL (Nepal Journals Online, a repository database index of journals published in Nepal) as of April 2022. Among these journals, four are indexed in Medline (online) as of March 2022, and four are indexed in SJR (Scimago Journal Rank) as of April 2021. The possible reasons for not being listed in the quality indexing system are either new in origin or not meeting the qualities for indexing them. However, only one journal among those was listed in Beall’s predatory list - hence, it can be said that most journals listed in NepJOL are not predatory. To check the qualities of Nepalese journals, the INASP (International Network for Advancing Science and Policy) has established Journal Publishing Practices and Standards (JPPS) framework.

Currently Medline-indexed electric (online) journals of Nepal along with their National Library of Medicine (NLM) IDs as of March 2022 are: Journal of the Nepal Medical Association (JNMA), 0045233; Kathmandu University Medical Journal (KUMJ), 101215359; Journal of Nepal Health Research Council (JNHR), 101292936; and Nepalese Journal of Ophthalmology (NEPJOPH), 101505288.

Similarly, the Scopus indexed journals of Nepal along with their Source-record IDS as of February 2022 are: Journal of the Nepal Medical Association (JNMA), 15831; Himalaya, 60486; Nepal Medical College journal (NMCJ), 145147; Kathmandu University Medical Journal (KUMJ), 4000148103; Journal of Nepal Pediatric Society (JNPS), 19700174963; Nepalese journal of Ophthalmology (NEPJOPH), 19900191831; Journal of Nepal Health Research Council (JNHR), 21100197340; Nepal Journal of Epidemiology (NJE), 21100854005; and International Journal of Occupational Safety and Health (IJOSH), 21101049089. Scimago Journal Ranking of the journals of Nepal based on Scopus data as of April 2021 along with their Scimago Journal Rank (SJR) and H-index respectively are: JNHR (0.264, 13), JNMA (0.176, 19), KUMJ (0.166, 25), and JNPS (0.130, 8). The impact factor of JNMA is 0.406 according to the Impact Factor List of 2021 produced by the Journal Citation Report (JCR), published by Clarivate (formerly Clarivate Analytics, a Web of Science group, the intellectual property, and Science division of Thomson Reuters).

Predatory journals in trustworthy databases
There are fake journals even in some reputable databases like PubMed, Medline, Scopus, etc. So, it is getting difficult to recognize an authentic journal. Predatory journals register their name similar to legitimate ones so it becomes difficult to recognize them. Due to these types of predatory journals in trustworthy research references like PubMed, Medline, Scopus, etc., it has become cumbersome to find out predatory journals.

PubMed is a free database resource for the search and retrieval of biomedical and life sciences literature. It was developed and is maintained by the National Center for Biotechnology Information (NCBI), at the U.S. National Library of Medicine (NLM), located at the National Institutes of Health (NIH). It facilitates navigating across several NLM literature resources: Medline, PubMed Central (PMC), and Bookshelf. There are about 5300 indexed journals in Medline and 30800 in PubMed as of March 2022. However, it also contains many predatory journals, which are not qualified for the Medline database. Many predatory journals are indexed in PubMed. As of October 2016, 12% were in the field of rehabilitation, 11.4% in neuroscience, and 20.2% in neurology; as of April 2017, 23.7% were in the field of rehabilitation, 16.1% in neuroscience, and 24.7% in neurology. Likewise, another study analyzed Beall’s list of predatory journals and found that in the PubMed database, out of 87 neurology journals, 14 were predatory, and out of 59 rehabilitation journals, seven were predatory. In addition, two journals about critical
medicine in the Scopus database were found to be predatory.\textsuperscript{22}

Similarly, another analysis of 944 journals categorized as predatory, had nine of them indexed in the Science Citation Index Expanded (SCIE) database, 28 in the Emerging Sources Citation Index (ESCI), 56 in Scopus, five in Medline, and five in EMBASE (Excerpta Medica database).\textsuperscript{22}

Fake accounts on social media and Google

The editors and members of predatory journals often use fake accounts to create their profiles. In addition, they use such profiles to link with new researchers, especially in developing countries. So, authentic researchers must have knowledge about fake accounts and profiles. Fake profiles are defined as those profiles which do not represent the real person, are opened manually by people, and later operated by a robot - categorized as Sybil account and duplicate account.\textsuperscript{24} Fake accounts are either machine-generated, human-generated, or half machine-generated and half human-generated.\textsuperscript{24} Similarly, “Phishing” is one of the common methods of cybercrime. Action fraud receives 400,000 phishing emails each year. Some of the ways to detect phishing emails are: it's not from the public domain, includes a suspicious attachment, may create a sense of urgency and may be written unofficially.\textsuperscript{25}

Facebook is the largest social networking site with more than 1.3 billion active users and 829 million active users with annual growth of 15%, it records 4.8% copy accounts, 2.4% misclassified accounts, and 1.5% unapproved accounts. According to Facebook compliance Report, five million of its clients every month are phony. So, there is an increase in the number of assaults.\textsuperscript{24}

Similarly, there are many fake LinkedIn profiles. It blocked about 21.6 million fake accounts over six months.\textsuperscript{26} Most of them gained a significant network, one had 500 contacts, and most of them use profiles of real people and images from the internet. Similarly, Dell’s counter-threat unit found that 25 fake accounts linked to 200 real ones which include persons of different sectors like defense, telecommunications, governments, etc.\textsuperscript{27}

Likewise, on Twitter among the 336 million monthly active users, around 5% are fake accounts and 9-15% of tweets are from these fake accounts. In 2019, Twitter cleared about 70 million fake accounts.\textsuperscript{28} These accounts mirror the account of a real person.\textsuperscript{29}

There are numerous fake accounts found on WhatsApp also. In February 2019, WhatsApp started deleting two million accounts per month because the company detected abnormal WhatsApp behavior to spread fake news and misinformation.\textsuperscript{30}

Google has also suffered a lot from fake accounts and phishing emails. During the peak of the pandemic, Google announced that they saw 18 million daily malware and phishing emails related to COVID-19, excluding the 240 million COVID-related daily spam messages. They reported that the phishing targeted mainly the United States (42% of the attacks), which was followed by the United Kingdom (10%) and then Japan (5%).\textsuperscript{31} One can stay safe from phishing in Google by Completing a security check-up for personalized and actionable security advice; enrolling in Google’s Advanced Protection program as it provides Google’s strongest security to users at increased risk of targeted online attacks, and enabling enhanced safe browsing protection in Google Chrome.\textsuperscript{31}

Importance of institutional email addresses

In 2009, two researchers analyzed and tried to get access to 87 public and institutional email accounts. They were able to hijack Gmail and Iskon addresses but not institutional emails.\textsuperscript{32} In 2008, it was found that Yahoo successfully resisted hacking whereas Hotmail and Gmail were successfully hacked.\textsuperscript{32} Many reputable journals use public domain-based emails instead of institutional ones. Beall indicated that using such public email accounts is a sign of unprofessionalism because most of the time, only predatory journals do so.\textsuperscript{32} A vast majority of the top doctors of New Jersey use public domain-based emails like Yahoo, Gmail, Optonline, Verizon, Comcast, and only a minor
use an institutionalized email. Analysis of 175 corresponding emails from journals found that 70% were institutional. They strongly recommended using institutional emails for professional communication because they appear more professional and are more secure. In 2000, there were 97% institution-based domains whereas it got reduced to nearly 75% in 2010. Hence, the use of public domain email accounts rose over time. The increase in the public domain-based emails was because of the development, and public penetration of Google’s Gmail from 2004 to 2009, and also due to better services from such domains.

Reasons for getting victimized by the predatory journals
In a survey conducted among authors with publications in a potentially predatory journal, 41% indicated pressure from their institution, while 25.3% indicated publishing for tenure and promotion. In another study conducted in Turkey, participants indicated that they felt pressured to publish in POAJ “Predatory Open Access Journal” because of fear of losing their jobs. Another questionnaire-based study conducted among 263 fourth and fifth-year medical students of two medical colleges from the Kingdom of Saudi Arabia (KSA) and New Zealand (NZ) from March to July 2019 concluded that pressure to publish studies during their term at medical school was higher among KSA students (75.6%) as compared to NZ students (12.3%).

Based on the papers reviewed in this article, there are some possible reasons for the flourishing of the predatory journals, Table 2.

### Table 2. Possible reasons for the flourishing of predatory journals based on papers reviewed

<table>
<thead>
<tr>
<th>Possible reasons for the flourishing of predatory journals</th>
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</thead>
<tbody>
<tr>
<td>1. Pressure from institutions to publish research articles.</td>
</tr>
<tr>
<td>2. Publishing for tenure and promotion.</td>
</tr>
<tr>
<td>3. Focusing on quantity over quality of research papers.</td>
</tr>
<tr>
<td>4. Receiving regular email invitations from predatory journals.</td>
</tr>
<tr>
<td>5. Lack of prior knowledge about predatory journals.</td>
</tr>
<tr>
<td>6. Lack of prior research experience.</td>
</tr>
<tr>
<td>7. Predatory journals are indexed in reputed databases.</td>
</tr>
<tr>
<td>8. An increasing number of fake profiles on social media and fake email accounts.</td>
</tr>
</tbody>
</table>

Harms of getting published in predatory journals
In a study, 65.9% of the participants did not indicate any risk in their career because of publication in a potential predatory journal. Meanwhile, 34.1% indicated that it damaged their reputation, received only a few citations, missed an opportunity for peer review, or their supervisors disapproved of it. One of the devastating problems is that researchers might conduct further studies based on the data of the predatory journals which can further create other misleading data.

How to prevent predatory journals
Many countries have taken steps to control the publication of predatory journals. In India, University Grants Commission (UGC) has been working actively to regulate the publication of predatory journals. Similarly, in the United States of America, suspected predatory journals can be reported to the Federal Trade Commission (FTC). A phishing email can be forwarded to the Anti-Phishing Working Group “reportphising@apwg.org”. A phishing text message can be forwarded to “SPAM(7726)”. Additionally, the phishing attack can be reported to the FTC at “ReportFraud.ftc.gov”. Some important measures to apply to prevent predatory journals based on papers reviewed include identifying such journals, realizing possible reasons for getting victimized, and use of information available on relevant websites, Table 3.
Table 3. Some important measures to apply to prevent predatory journals based on papers reviewed

<table>
<thead>
<tr>
<th>Measures to prevent predatory journals</th>
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<tbody>
<tr>
<td>1. Follow the criteria in Table 1 to identify predatory journals.</td>
</tr>
<tr>
<td>2. Be aware of the possible reasons for getting victimized mentioned in Table 2.</td>
</tr>
<tr>
<td>3. Check Beall’s list and Journal Blacklist created by Cabells International to look for predatory journals.</td>
</tr>
<tr>
<td>5. Timely organize seminars and conferences to impart knowledge about predatory journals.</td>
</tr>
<tr>
<td>6. Inform other researchers and new researchers if you fall prey to predatory journals.</td>
</tr>
<tr>
<td>7. Formulate and circulate guidelines regarding predatory journals.</td>
</tr>
<tr>
<td>8. Check the membership of the journal in the Open Access Scholarly Publishers Association (OASPA) and the Directory of Open Access Journals (DOAJ).</td>
</tr>
<tr>
<td>9. Timely update list of predatory journals at the institutions.</td>
</tr>
<tr>
<td>10. In the United States of America, report the suspected predatory journal to the Federal Trade Commission (FTC).</td>
</tr>
</tbody>
</table>

Conclusion

In summary, there are several criteria to identify predatory journals. Beall’s list can be used as the main basis to identify such journals. There are several reasons for falling prey to predatory journals. Knowledge regarding such journals must be provided to all researchers, especially beginners. Researchers must prevent themselves from getting victimized by using the tips mentioned above. Researchers must focus on quality over the quantity of research papers. Researchers should not compromise the quality of their work due to the fear of “Publish or Perish”. Scientific scholars should update themselves in the field of information technology to prevent themselves from fake links, profiles, and emails. Researchers can make their community strong by sharing knowledge about predatory journals with their colleagues and fellow researchers.

Recommendations

Awareness is the key to identifying and preventing from being victimized by the predatory journal. In a predatory journal, usually, there is a single person who maintains contact with the author through email, social media, and mobile phone, and the same person has access to change the editorial board member. Such journals keep changing the members of the editorial board. There is no editor-in-chief, but just a list of authors on the editorial board. The department associated and the institution provided do not match, for example, the “Department of Aeronautics” in the “Fishery industry”. They lure new researchers by a promise to provide certificates for authors and members of the editorial board. If an inquiry email is sent to the members of the editorial board, they have a common format of replying, and the email has spelling and grammatical mistakes. There is usually no contact address of the corresponding author in the articles published. They frequently send friend requests to new researchers on social media. They may have fake profiles on academic social network sites like ResearchGate. We recommend that future enthusiastic and genuine researchers conduct further research on suspected predatory journals.
journals on the points mentioned here in this mini-review.

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Author Contribution
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Reference
15. NCBI. NLM Catalog. 2022. [cited 2022 Apr 4]. | Weblink | Full Text |
22. Duc NM, Hiep VD et al. Predatory Open Access Journals are Indexed in Reputable Databases: a Revisiting Issue or an Unsolved Problem. MED ARCH. 2020 AUG; 74(4): 318-322. | DOI | Google Scholar | Full Text | Weblink |
26. Marks G. LinkedIn Blocked 21.6M Fake Accounts This Year...And Other Small Business Tech News This Week. Forbes. 2019 [cited 2021 Oct 31]. | Full Text | Weblink |
32. Kozak M, Iefremova O, Szkał J, Sas D. Do researchers provide public or institutional E-mail accounts as correspondence E-mails in scientific articles? Journal of the association for information science and technology. 2014 Nov 6. | DOI | Google Scholar | Full text | Weblink |
35. Chawla DS. Predatory-journal papers have little scientific impact. Nature [Internet]. 2021 Feb 8. | DOI | Google Scholar | Full Text | Weblink |
36. Wadgave U, Khairnar MR. India’s combat against predatory journals. Journal of Indian Association of Public Health Dentistry. 02-08-2021;19(2):152. | Full Text | Weblink |