

Predatory Publishing: The Dark Side of Academic Dissemination

¹Fatimah Bibi Hamzah*, ¹Ramlan Mahmod, ¹Nor Hafiza Abd Samad, ¹Anis Juanita Zainuddin,
¹Nor Hafiza Haron, ¹Wan Asiah Wan Muhamad Tahir, ²Mohd Azahari Mohd Yusof

¹Faculty of Computing & Multimedia, Universiti Poly-Tech Malaysia, Kuala Lumpur, Malaysia

²College of Computing, Informatics and Mathematics, Universiti Teknologi MARA (UiTM) Cawangan Melaka Kampus Jasin, Malaysia

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ABSTRACT

Researchers have long debated the unexceptional riddle of predatory publishing. These publications take advantage of the open-access publishing concept and prioritize making money over disseminating research. Through active email marketing and excellent acceptance rates, they seek out new entries. However, due to their lack of thorough peer review, the submitted articles' scientific validity is in doubt. This is crucial because an increasing number of individuals read these journals and rely on the information they contain. The credibility of the scientific community is thus being threatened by predatory journals, and it is imperative that everyone is aware of this issue. The aim of this paper is to create awareness among authors, especially novice ones, about predatory publication. We briefly go over the history of the open access movement, the blacklists, and the whitelists, as well as how to spot and avoid predatory journals. We conclude that research institutions should encourage their researchers to publish their articles in valuable journals indexed in Web of Science's Journal Citation Reports (JCR), Clarivate Analytics, formerly part of Thomson-Reuters), or other famous scientific databases such as Scopus and Publons. In this way, attention to the Thomson Reuters' Journal Impact Factor (JIF) and Journal Ranking (JRK) and Scopus grading may be useful and necessary.

KEYWORDS

Open-access, predatory, scholarly, peer-reviewed.

Introduction

Scholarly publication is significant for faculty members since it fulfills the promotion requirement and improves the researcher's, institution's, and country's credibility and reputation. Universities frequently demand academics and students to publish on a regular basis, and this "pressure to publish" can lead to a range of unethical behaviors. Generally, young researchers or scholars try to publish a number of articles in a very short period of time to increase their academic reputation or strengthen their curriculum vitae [1]. In most cases, the number of publications is linked to promotions, salary incentives, and degree completion [2]. It does not always take into account the quality of the work (reflected by the impact factor and reputation of the publishing journal and number of citations) [3]. When quantity is prioritized over quality, the result is likely to be poor.

In this context, a growing number of publishers of scholarly journals are actively courting authors to submit their excellent work to their scholarly, open-access, peer-reviewed publications. However, Jeffrey Beall, a librarian at the University of Colorado, has dubbed these publications "predatory journals" because the majority of them lack basic peer review procedures and customer service. He came up with a set of standards that may be used by authors to identify predatory journals and publishers. These journals often charge authors high publication fees without providing the legitimate services of proper peer review and editorial standards. The consequences for academia are severe, as predatory

publications undermine the credibility of research and allow substandard or even fraudulent work to enter the academic discourse. In extreme cases, it can tarnish the reputation of both researchers and institutions that inadvertently associate with such journals. Furthermore, early-career researchers are particularly vulnerable to these schemes, as they are often unfamiliar with reputable publishers or may be enticed by the quick turnaround and promises of prestige.

In this review, we will outline the history and findings of the research on predatory journals and offer an overview of the blacklists, and the whitelists, as well as tips on how to identify and avoid predatory publications. Understanding the characteristics of predatory publishers is essential for maintaining the integrity of scientific research and ensuring that academic contributions genuinely enhance the field.

The Open Access Publication

Scientific publication has progressed from subscription-based, print-only journals to open-access (OA), publicly accessible internet journals over time. Just a few years after its inception in early 1990s, OA publication has grown in popularity, with several models (including gold, green, hybrid, and platinum or diamond open-access) available [4], [5] (detailed in Table 1). The OA model is characterized by journals making their articles publicly accessible by posting them online in freely downloadable formats. Therefore, the time between submission and publishing is typically shorter than it is for traditional journals, ensuring speedier dissemination and increased visibility of scientific work [6]. However, authors who submit their manuscripts to OA journals are compelled to pay a significant publication fee, known as the article processing charge (APC), in contrast to subscription-based journals, which levy small fees upon the approval of the article.

Table 1 OA Publication Models

OA Model	Description
Gold	The original version of open access, known as "gold open access," required that an APC be paid to an open-access journal at the time a manuscript was accepted by the journal. Since subscriptions do not bring in any money, these fees are (ostensibly) used to pay for peer review and publication expenses. The peer review and publishing processes could be expedited, but the publishing procedures are similar to those of subscription-based publishers (with no decline in quality).
Green	Authors who submit manuscripts to subscription journals are permitted to post a free copy of their paper on their website or a site for an institutional repository. Since some research funders, like the National Institutes of Health, frequently demand this choice, the majority of publications currently provide this format.
Hybrid	By paying an APC, authors of traditional subscription-based journals in this model have the option of making their works freely available in the journal's electronic archive. As a result, a subscription-based journal may provide free access to content for members without memberships. This design was intended to be a compromise between subscription-based and open-access journals.
Platinum/ Diamond	The material of platinum (sometimes referred to as sponsored or diamond) open-access publications is immediately accessible without the need to purchase a subscription or license. No article publication fee is charged to authors, and one or more sponsoring organizations cover all journal publishing expenses.

The idea that charging for subscriptions was unfair to readers from low- to middle-income countries who could not afford the subscription fees and that research topics were therefore skewed to those of interest to readers from wealthier countries, was one reason that reputable journals switched to a pay-for-publication model. These problems were intended to be resolved by the author fee model, which transferred publication expenses from readers to authors.

However, this modification has led to other, less desirable outcomes. Throughout the early 2000s, a number of journals debuted with the claims of speedy publishing, high acceptance rates, and affordable author fees [7]. This was especially appealing to authors from low- to middle-income nations who were under pressure from their jobs to publish frequently but lacked the resources to pay the higher author fees demanded by reputable journals. As a result, there are numerous journals that are not indexed, have low academic standards, little to no peer review, and make a substantial profit from author fees. These journals or publishers abuse the OA publishing model and are interested in money-making rather than disseminating research [8], turning academic achievement into a marketing tool for commercializing research [9].

This exploitation of the OA model has led to the rise of "predatory journals," which have been described by some authors as a threat to scientific integrity, a form of robbery, an epidemic, and even a pandemic [10]. They clearly use duplicitous means to strategically exploit the intellectual property of others and denigrate ethical publications in their client acquisition strategies. They employ duplicitous means to strategically exploit the intellectual property of others while tarnishing the reputation of ethical publications in their pursuit of profits. These journals undermine the value of peer-reviewed research, often bypassing the rigorous standards that legitimate journals uphold, thus diluting the overall quality of scientific output. Predatory journals harm more than just individual researchers. They compromise the credibility of the scientific community, weakening the trust that the public and other scholars place in published findings. Furthermore, they prey on vulnerable early-career researchers or those from resource-constrained institutions, tempting them with promises of quick publication but offering little in return in terms of quality assurance or academic rigor. This cycle perpetuates a damaging system where the primary focus shifts from the pursuit of knowledge to a profit-driven enterprise that distorts the ethical foundations of academia.

What are Predatory Publications?

There is presently no agreed-upon definition of predatory publishing [10], [11]. Moreover, various reductionist terms like "illegitimate journals" [12], "dark" journals [13], and "open access journals with questionable marketing and peer review practices" [14] have been used to describe predatory journals in the literature, which has caused confusion about the terminology on this matter [15]. On the other hand, [3] specifically characterized predatory publishing as methods that exploit the author-pays model by setting up fraudulent operations and misleading authors into believing they are legitimate scholarly outlets. The term "predatory journals" was coined in 2011 by Jeffrey Beall, a librarian from the University of Colorado Denver, who maintained a list of potential predatory journals on his blog titled Scholarly Open Access [9], [16]. While the blog is no longer active, Cabell's International, a provider of scholarly services, has since taken over with a curated list of predatory journals.

[11] defines "predatory journals" as those that exploit the OA model for profit without adhering to the scientific publication standards. In late 2019, [17] and colleagues offered a more comprehensive concept: "Predatory journals and publishers are entities that prioritize self-interest at the expense of scholarship, characterized by false or misleading information, deviation from best editorial and publication practices, a lack of transparency, and/or the use of aggressive and indiscriminate solicitation practices". Predatory publishers often operate from minimal setups, sometimes consisting of just one room or one computer, which undermines the credibility of scientific work [18]. These operations are frequently run by shady groups, bypass proper peer-review processes, and solicit manuscripts through aggressive emails, inviting authors to contribute articles, serve on editorial boards, or even act as editors for new journals with scientific-sounding titles.

Authors are typically required to pay publication fees—often non-refundable—either before or after submission, and the costs are set low enough to attract unsuspecting scholars. Predatory journals attempt to mirror reputable journals by using titles or website names that resemble established publications, listing fake contact locations, and inflating fake impact factors [1]. They rarely proofread or correct errors, leading to high numbers of grammatical and technical mistakes [19], and they tend to increase the number of articles per issue, publishing numerous volumes each year.

In 2010, around 53,000 fraudulent articles were published, and by 2014, roughly 420,000 fake articles had been published across 8,000 predatory journals [1]. Fake conferences are also becoming more frequent, leading to the publication of even more low-quality papers. A study by [20] found that among 304 predatory journals, 157 accepted fake articles for publication. Similarly, in 2013, 24 fake conferences accepted 85 fake manuscripts [21]. The Jeffrey Beall list included 1,155 predatory publishers, 1,294 standalone journals, 115 hijacked journals, and 53 fake metrics. These publications primarily target inexperienced scholars from developing countries, where academic promotion systems often emphasize the quantity rather than the quality of publications. By 2014, authors from Asia and Africa accounted for more than three-quarters of submissions to predatory journals [18], contributing to a polluted academic landscape where university positions are filled by individuals with poor publication histories.

[6] emphasized the traditional interaction between the researcher, journal, and readers: authors submit manuscripts to subscription-based journals for free, where high-quality peer review ensures the scientific rigor of the content, but readers must pay to access it. In OA journals, while the same standards of peer review apply, authors pay an article processing charge (APC) so that their work can be freely accessed by the public. Predatory journals, however, distort this model, charging authors high APCs without delivering quality peer review or ensuring the scientific merit of the papers. In doing so, they deceive both the authors and the broader scientific community. Figure 1 illustrates the relationships among authors, journal types, and readership within this framework.

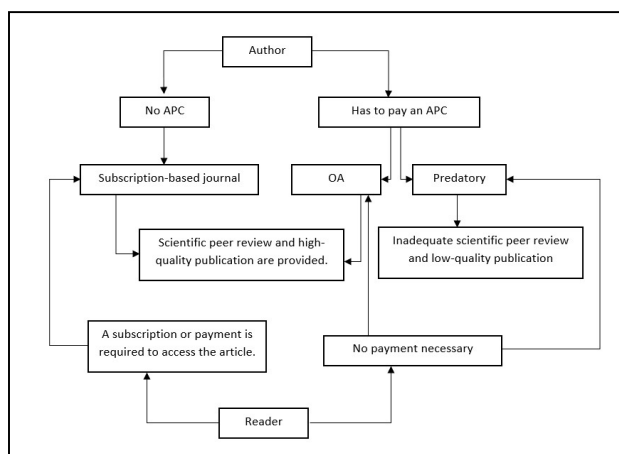


Fig. 1: The relationship between author, journal, and readership.

Following the relationships outlined in Figure 1, it becomes clear that the distinction between legitimate and predatory journals is not always immediately apparent to inexperienced researchers. Many predatory publishers mimic the structure, formatting, and editorial standards of established journals, making it difficult to identify them without careful scrutiny. As a result, scholars, especially those under immense pressure to publish, may unintentionally submit their work to these outlets. This not only wastes their time and financial resources but also undermines the credibility of their research output. Additionally, articles published in predatory journals are

unlikely to be cited or recognized within the scientific community, diminishing their impact and limiting academic career advancements.

How to identify and avoid publishing in a predatory journal?

To identify and avoid publishing in predatory journals, authors must exercise careful evaluation of potential publication venues by relying on various strategies and resources. One of the most effective methods is utilizing whitelists and blacklists, which provide a starting point for assessing the credibility of journals. Jeffrey Beall's blacklist, which originally flagged potentially predatory journals, became a widely recognized resource until it was taken down in 2017 [22]. Today, its successor, Beall's List (maintained by anonymous academics), continues to warn authors about suspicious journals. On the other hand, whitelists, such as the Directory of Open Access Journals (DOAJ) and Cabell's Whitelist, provide vetted and trustworthy journals, helping authors choose reputable outlets [23].

Besides relying on lists, authors can use journal selectors like Think. Check. Submit., a platform designed to guide researchers through the process of verifying a journal's credibility. This platform offers a checklist that covers key factors such as the journal's peer review process, publication fees, and the integrity of its editorial board. Authors should carefully evaluate the journal's website, looking for clear information on its peer review process, submission guidelines, and editorial policies. Legitimate journals typically provide detailed information about their editorial board members, affiliations, and contact details. Furthermore, authors can verify whether the journal is indexed in reputable databases like Scopus, Web of Science, or PubMed.

Another important criterion is the journal's APC (Article Processing Charge). Predatory journals often charge low fees to attract inexperienced authors, but they may also impose exorbitant charges after acceptance. Authors should carefully review the journal's fee structure and compare it to industry standards. A transparent and reasonable APC is often a sign of a reputable journal. Additionally, any journal that guarantees rapid publication without rigorous peer review or offers unsolicited invitations for submissions should raise red flags. In summary, authors must adopt a multifaceted approach to avoid predatory journals, using whitelists, blacklists, journal selection tools, and detailed evaluations of journal practices. By doing so, they can ensure that their research is published in trustworthy, high-quality outlets, contributing to the integrity of academic publishing. Table 2 below provides a comprehensive list of tools and sources that can be used to identify reputable journals and avoid predatory publications.

Table 2 Blacklists and Whitelists of journals and publishers

Source	Website
Blacklists of journals and publishers	
Beall's blog (archived copies)	https://web.archive.org/web/20170112125427/https://scholarlyoa.com/publishers/
Cabell's International	https://www.cabells.com/
Whitelists of journals and publishers	
Directory of Open Access Journals (DOAJ)	https://doaj.org/search

Source	Website
Master Journal List of Clarivate Analytics	http://ip-science.thomsonreuters.com/mjl/
EBSCOhost DATABASES	https://www.ebsco.com/products/research-databases
ProQuest Databases	https://proquest.libguides.com/pqc/content
PubMed PubReMiner	https://hgserver2.amc.nl/cgi-bin/miner/miner2.cgi
SciFinder	https://ucsd.libguides.com/scifinder/scifinder-n
Scopus	https://www.scopus.com/home.uri
UlrichsWeb	http://ulrichsweb.serialssolutions.com/login
Publons	https://publons.com/journal/?order_by=reviews
EndNoteTM Journal Matching	http://endnote.com/product-details/manuscript-matcher
PubMed/MEDLINE	https://www.ncbi.nlm.nih.gov/nlmcatalog/journals
Open Access Scholarly Publishers Association (OASPA)	http://oaspa.org/membership/members/
International Association of STM Publishers	http://www.stm-assoc.org/membership/our-members/
International Committee of Medical Journal Editors (ICMJE)	http://www.icmje.org/journals-following-the-icmje-recommendations/
Committee on Publication Ethics (COPE)	http://publicationethics.org/members/journals/?f[0]=bundle%3Ajournal
<i>Additional tools to identify potential journals</i>	
Think Check Submit Campaign	http://www.thinkchecksubmit.org/
Springer Journal selector (Beta)	https://journalsuggester.springer.com
Elsevier Journal Finder	https://journalfinder.elsevier.com
Journal Guide	https://www.journalguide.com/
JANE-journal author name estimator	http://jane.biosemantics.org/
Edanz Journal Selector	https://www.edanz.com/journal-selector
Enago Open Access Journal Finder	https://www.enago.com/researcher-hub/journal-finder.htm
JSTOR Labs Text Analyzer (Beta)	https://www.jstor.org/analyze/
Spi-Hub Scholarly Publishing Information Hub	https://spi-hub.app.vumc.org/

Although various criteria have been proposed for identifying predatory journals, distinguishing between legitimate but new journals and predatory ones remains challenging, especially when many employ similar marketing strategies. Some new journals might use aggressive solicitation tactics or offer rapid publication timelines in their initial phases to attract submissions, but their intent may be genuine in establishing a credible academic presence. This blurs the lines between predatory journals and those that are simply new entrants trying to grow their visibility. Predatory journals, however, tend to focus primarily on profit-making rather than advancing scholarly communication, and they often lack rigorous peer review, transparency, and editorial oversight.

Moreover, some journals that start with good intentions may devolve into predatory practices over time as financial pressures or lax governance erode their commitment to scholarly ethics. This further complicates the ability to categorize journals definitively. Researchers must therefore remain vigilant, not only by checking the journal's current practices but also by monitoring any changes in editorial policies or peer review standards over time.

In addition to tools like blacklists and whitelists, authors should consider the journal's indexing status and reputation within the academic community. If a journal is not indexed by recognized databases like Scopus or Web of Science or lacks endorsements from respected academic institutions, it may be a sign that the journal is not reputable. Established scholarly journals invest time and effort in building a robust editorial process, maintaining their reputation, and adhering to ethical publishing standards. These aspects are often lacking in predatory publications, as outlined in Table 3. Therefore, careful scrutiny of journal practices, particularly for new or lesser-known outlets, is essential for safeguarding academic integrity.

Table 3 Criteria identified or suggested in the literature that can be used to identify predatory journals

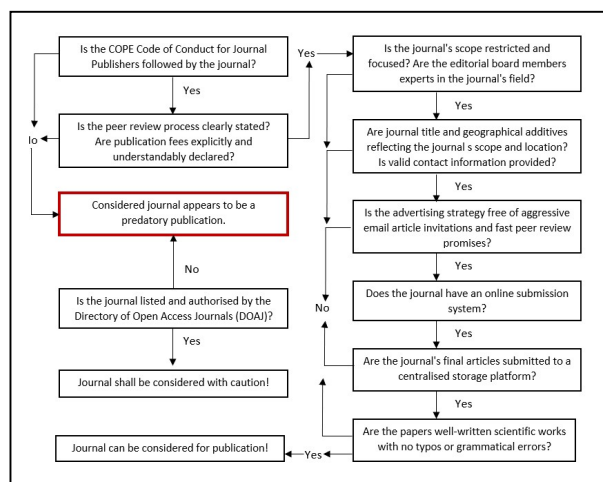
Criteria	Description	References
Peer Review	The journal only offers a cursory or non-existent peer-review procedure to guarantee the submitted paper's scientific validity.	[20], [28]
Emails	Aggressive or flattering email invitations sent to a large number of individuals to attract paper submissions from scientists.	[29]
Advertising	Low APC is offered, and speedy publishing and peer review processes are guaranteed.	[28], [30]
Publication Fees	Publication costs are omitted or only made known following a paper's acceptance.	[28], [30]
Title and Logo	The title of the journal may be deceptive, seem too ambitious, or even replicate or copy titles from other renowned and well-known publications. Additionally, the journal's logo can resemble that of a respected publication.	[31], [32], [33]
Editors	Editorial boards may be populated with names of famous authors without their consent or fake (non-existent) editors.	[34]
Metrics	To encourage paper submissions, bogus metrics or false impact factors are presented.	[21], [35]
Scope	The journal's scope is too broad and invites submissions from all disciplines which are often unrelated to each other.	[28]
Publishing ethics and standards	Research and publication ethics are not upheld; no services for reviewing, editing, or indexing are offered.	[13], [19], [34], [36]
Indexing	often falsely claim to be indexed in popular databases like PubMed, DOAJ, Scopus and EBSCO, which are displayed boldly on their websites.	[16], [17]
Copy-editing and spelling errors	Published articles have inadequate copyediting and are rife with grammatical and typographical mistakes. Such inaccuracies may also be discovered on the journal's website, which frequently contains dead links.	[37]
Contact Information	The publisher's contact information (email, phone number, and address) is invalid, and there is no way to reach them. Commonly used email addresses come from free public services like Yahoo and Gmail.	[38]
Submission system	Instead of using a legitimate paper submission mechanism, predatory journals request that writers transmit their submissions by email.	[39]

Figure 2 provides a visual representation of a decision tree designed to guide authors in differentiating between legitimate open-access (OA) journals and predatory journals. This decision-making tool helps authors navigate the complex landscape of OA publishing by considering several key factors: the journal's peer-review process, its transparency regarding fees and editorial policies, indexing status, and the presence of reputable editorial board members.

Figure 2 A decision tree that can be used by authors to discriminate between OA and predatory journals (adapted from [6]).

At the beginning of the decision tree, authors are prompted to assess whether the journal provides clear and detailed information about its peer-review process. A legitimate OA journal typically has a rigorous and transparent peer-review system, while predatory journals often lack these essential protocols. Authors are also encouraged to evaluate whether the journal is indexed in reputable databases, such as Scopus, Web of Science, or the Directory of Open Access Journals (DOAJ). Inclusion in these databases is usually a sign of legitimacy, as it indicates that the journal has met certain scholarly and ethical standards.

Another critical checkpoint in the decision tree is the journal's editorial board. Legitimate journals will have a well-established editorial board with recognized experts in the field. In contrast, predatory journals often list fictitious or irrelevant individuals on their editorial boards, or they may not provide any information about their editors at all. Additionally, the decision tree considers whether the journal is transparent about its fees. While it is common for OA journals to charge article processing charges (APCs), legitimate journals clearly outline these fees and explain how the funds are used to support the publishing process. Predatory journals, on the other hand, may hide or ambiguously disclose these charges, often surprising authors with hidden costs after submission. By following this structured approach, authors can systematically evaluate the credibility of an OA journal and avoid falling prey to predatory publishers.



The impact of predatory journals on daily work

Authors who publish in predatory journals often fall for their deceptive characteristics, which include false claims of high-quality peer review, attractive websites, and promises of fast publication. However, the consequences of associating with such publishers can severely damage an academic career. While predatory journals may offer the convenience of fast publication, the long-term effects include minimal visibility and poor credibility. These journals lack proper indexing in reputable databases, leading to low discoverability and citation rates for the work, which in turn diminishes the scientific impact. Furthermore, predatory journals often fail to provide consistent access to published articles. While they may remain online temporarily, there is a significant risk that the journal will disappear, taking down all previously published papers with it. This lack of permanence can compromise the accessibility and scholarly record of the work, making it difficult for future researchers to reference or build upon it.

The absence of a proper peer-review process is another significant drawback. Peer review acts as a safeguard for maintaining the quality and reliability of scientific publications. Without it, authors risk producing flawed or unverified research that diminishes their credibility. In the long run, scholars who publish in such outlets may face damage to their professional reputation, especially as employers and funding agencies become more adept at identifying predatory practices.

Recommendations for the academic organizations, faculty, researchers and students

It is crucial that we develop the ability to critically evaluate publications. These skills should be nurtured and reinforced through training at the university or institutional level. Higher education institutions and regulatory authorities must support the dissemination of impactful research, which can be measured using various metrics such as the h-index. However, impact factor and other scientometric indicators should not be viewed as the sole determinants of quality. Academic institutions, universities, and scientific societies should work to enhance research dissemination by establishing research repositories, thereby improving the quality and visibility of the publications produced by their affiliates. Researchers can share their studies on platforms like ResearchGate, Academia, LinkedIn, and Twitter, depending on the journal's policy. Additionally, using ORCID can increase the exposure of their research and connect it to a broader academic audience. We recommend that research institutions encourage their scholars to publish in high-quality journals indexed in Web of Science's Journal Citation Reports (JCR), Clarivate Analytics, or other reputable databases such as

Scopus and Publons. Paying attention to the Journal Impact Factor (JIF), Journal Ranking (JRK), and Scopus metrics can offer valuable guidance for identifying reputable journals.

Raising awareness about predatory journals is equally important. Editorials like this one contribute to increasing awareness, but it is encouraging to note that several other periodicals and professional bodies have also recently addressed this issue. Another effective safeguard for new authors is to collaborate with experienced researchers and publishing teams. While not foolproof (as even seasoned authors can sometimes be deceived), working alongside researchers with an established track record offers novice authors insights into the publishing landscape of their field. Collaborations provide a range of benefits, including internal peer review, feedback on writing and editing, and guidance on choosing the best journal for publication. This not only helps avoid predatory journals but also accelerates the publication process by reducing trial-and-error submissions.

Moreover, tools like blacklists and whitelists, as mentioned in Table 2, are essential in helping authors identify and avoid predatory publications. These resources offer checklists and criteria that can be invaluable when selecting a journal for submission. Although predatory publishing is an unfortunate consequence of the open-access movement, its presence does not undermine the legitimacy of open-access models themselves. Rather, it underscores the need for proper training, resources, and vigilance. Authors, with the right support, can learn to detect and avoid journals that engage in fraudulent or unethical practices, effectively cutting off the flow of submissions that such journals rely on to survive.

In conclusion, it is imperative that all stakeholders work together to improve research dissemination, enhance the visibility of publications, and ensure accessibility. A coordinated effort is required to address the rising threat of predatory and unethical publications. The battle against predatory publishing will be a long and complex one, but it is winnable through a combination of education, stricter publication guidelines, and financial support for researchers, especially those in developing countries. Institutions, journals, and regulatory bodies must continue to work toward creating a publishing environment that prioritizes quality, transparency, and integrity. Ultimately, safeguarding the integrity of academic publishing requires a collective commitment to ensuring that the research that shapes our world is disseminated through credible and ethical channels.

Conclusion

Predatory publishing poses a significant threat to academic integrity, scholarly communication, and the trust that underpins the research community. As the rise of open-access publishing has democratized the dissemination of knowledge, it has also created opportunities for exploitative practices. Predatory journals compromise the quality of academic output, exploit researchers—especially early-career scholars—and distort the true impact of research by promoting quantity over quality. The negative repercussions of falling victim to these journals include damaged reputations, wasted resources, and misleading research that can undermine progress in various fields of study.

To combat this issue, a multifaceted approach is necessary. Authors, institutions, and governing bodies must work together to increase awareness of predatory journals, provide better guidance for journal selection, and reinforce ethical publishing practices. Universities must place a greater emphasis on quality rather than quantity in research evaluations, and researchers must be trained to critically assess publication outlets. Furthermore, the academic community needs effective tools, such as robust blacklists, whitelists, and decision trees, to help authors navigate the complex publishing landscape. In conclusion, predatory publishing is not just an issue for individual researchers but a collective challenge for the academic world. By raising awareness, providing appropriate education, and developing strong institutional policies, we can ensure that scholarly communication maintains its integrity and that researchers contribute meaningfully to the advancement of knowledge. Only through sustained and collaborative efforts can we effectively mitigate the risks posed by predatory journals and uphold the standards of academic excellence.

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