

Mini Review

Research Integrity at Risk: Predatory Journals Are a Growing Threat

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The desperation to publish among the scientific and academic community has reached new pinnacles and a new threat to academic integrity has surfaced in the form of predatory journals. These journals try to attract the young researchers with aggressive advertisements promising an early turnaround time for publication which is through absence of peer review and comes at a cost in the form of article processing fees. Predatory journals are an increasing menace affecting research integrity since they assist in author misconduct. They exploit its very foundation which aims at conducting and reporting the research in a truthful way that in turn builds trust and confidence for science in the society. This review gives an overview of predatory journals, their modus operandi, the ethical concerns associated with them and means to curb this menace.

Keywords: Academic misconduct, Beall list, Open access journals, Predatory journals, Research integrity

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Introduction**Publishing in Journals - A Need and Necessity**

Over the years, the desperation to publish among the scientific and academic community has reached new pinnacles with a resultant trend of a massive upsurge in the publication of scientific manuscripts. The credit for this trend goes to the fact that significant impetus is being given to publications in most Indian universities not only for faculty recruitment, promotions or increments but are also used as the index for acquiring grants and funding. While these requirements are planned as a measure for propagation of good science, they challenge the fundamentals of research as the publications incline to be coercive and compulsive.¹ This relentless pressure is especially felt by young researchers who need to publish their work to boost their rating (impact factor, citations, h-index, etc) for their academic advancement.²

Advent of Open Access Era

The year 2000 heralded the advent of the open access (OA) era. This initiative transformed the face of academic publishing as these journals make their articles widely available and freely accessible to the readers online, earning better citations. Further, these journals ensure easy accessibility of scientific literature to a significantly larger number of lay people. The key transformation in this model as compared to subscription-based journals

is the shorter period from submission to publication that warrants faster dissemination. However, this usually comes with a cost in the form of article processing charge (APC) which can run into substantial amounts. The fee is apparently used for covering the publication costs, as they lack the revenue generated by traditional subscriptions.^{2,3}

Emergence of Predatory Journals

The escalation of open access drive accompanied by an era of “publish or perish”, led to exploitation of the open access model and a new threat to academic integrity surfaced in the form of predatory journals. These journals are referred to as “predatory” as they target the academicians for financial gains but compromise on the publishing standards affecting science itself.^{4,5}

Inception and History

The problem of predatory journals was first highlighted by Jeffrey Beall, from University of Colorado who also made a record of doubtful journals; conspicuously referred to as Beall’s List that has several hundred OA publications on the list. This list, however, has been recently removed due to various reasons elaborated by Bartholomew.⁵

Identification of Predatory Journals (Motive and Modus Operandi)

The motivation of these journals is monetary benefit,

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and their formula includes abuse of authentic open-access publishing.^{1,2}

The demarcation between predatory journals and genuine OA journals is frequently indistinct. The last few years have seen a rapid increase in these journals with over 8000 predatory journals being published presently, making their recognition an important and pertinent aspect to maintaining scientific integrity.^{2,4,5}

Some important characteristics that can help distinguish these journals include:

Publicity and advertisements: Aggressive advertising is carried out to draw authors to submit to these journals by the publishers; the emails are characteristically very tenacious and use complimentary words that commend the author's current or past work. The invitations are often outside the recipient's field of study. The emails tend to have numerous grammatical and spelling errors indicating their poor standards. These mails are especially sent to young amateur authors predominantly from developing countries that are easy to entice and form their main clientele. Additionally, the emails tend to come from private domains.^{2,4,5}

Swift review process: These journals even claim that the article processing time from submission to acceptance can be as little as 72 hours. This highlights the complete disregard towards the peer review and systematic evaluation of the manuscript.²

Cursory review or no peer review: The scientific quality of the manuscripts in these journals is doubtful as there is no meticulous peer review process and at times, there may be negligible or complete absence of peer review.^{2,4,5}

Lack of online submission system: Genuine publishers ask the authors to submit the manuscript through a manuscript submission system, while most predatory journals request the authors to send their manuscript via emails.^{2,4,5}

Article processing fees: The predatory journals usually charge a high article processing fee to the submitting authors. There are cases reported where the publication fee may not be plainly mentioned, and authors have been charged very high prices following acceptance of the article.^{2,4,5}

Misleading image: These journals create a deceitful impression of being a trustworthy journal, as their website may be exceedingly refined to mimic well-known eminent journals. The names of these journals can be ambiguous and may impersonate or even duplicate the names of renowned journals. The names of the predatory journals usually are very impressive and vague with words like International, Global, American etc, encompassing most areas without any mention of explicit subject area and no distinct scope.^{2,4,5}

Editorial deception: Most journals may have fake editorial members. The publishers of predatory journals search for editorial board members and send unsolicited invitations to numerous scientists randomly to join the editorial board without doing a background assessment on them.

At times, some scientist's mentioned as editors in the journal are usually unaware of the fact. Many a time, the publisher and the editor-in-chief credentials are given to the same person on the website making identification of the publisher difficult; the editors may not have obligatory associations or the credentials also. The journal site may not have the information needed to contact the Editor or the existing information may be inaccurate.^{2,4,5}

Misleading metrics: These journals provide deceptive and exaggerated impact factors and fabricated indexing information to attract authors. Predatory journals offer false impact factors that are initiated by fake companies. They wrongly assert that they are indexed in prominent databases like PUBMED, etc, while in reality, these journals are not indexed, thus making it difficult to trace an article once published.^{2,4,5}

Lack of publication ethics: The journals do not follow the ethical practices involved in publishing with negligence noted in all aspects, including peer review, copyediting as well as archiving of the published articles. The work once submitted in these journals cannot be taken back as the majority of these journals have a stringent policy as to retraction of the articles.^{2,4,5}

Copyediting errors: The articles published in these journals demonstrate sloppy copy-editing service with abundant typos and grammar mistakes evident throughout the issue. Additionally, the website may also be poorly constructed with numerous errors and presence of broken links that are not working.^{2,4,5}

Ethical Concerns Related to Predatory Journals

Predatory journals pose an important risk for research integrity since they permit author misconduct. They exploit the foundation of research integrity which aims at conducting and reporting the research in a truthful way that in turn builds trust and confidence in science in the society.^{1,6,7} The chief ethical concerns include:

Misrepresentation: Predatory journals may display false information with regards to peer review, editorial process and the indexing services. The editorial board may be fake, and the listed editors may not be even aware that their names exist in the editorial board. The websites may lack editorial office address and the location is usually ambiguous. The article processing charges are not usually clear, and many a time, the authors are asked to pay huge amounts after acceptance of the manuscript. They may give false indexing information and deceitful impact factors to attract authors. The journal names may resemble an existing standard journal leading to confusion.^{1,6,7}

Lack of Publication ethics: Predatory journals disregard the morals and good practices involved in publication of scholarly literature affecting the ethics and quality of published science. These include lack of peer review, screening for plagiarism, publishing correction, authorship statements, conflict of interest disclosures and other best

practices as dictated by COPE. Their singular purpose is to make money.^{1,6,7}

Predispose to Academic Misconduct and deception: Some authors choose to publish in these journals as they may want to avoid the peer review process for their inferior work which may not be accepted in legitimate journals. Authors thus distort their scholarly efforts by listing these publications to inflate their CV, pretending that they are available in standard journals. These authors thus not only cheat the system but are a significant damage to authors who play straight and adhere to the rules of academic publishing. They also help in growth of these predatory journals by paying their fees.^{1,6,7}

Research and the Funds obtained are futile: Any research that comes out in a predatory journal is usually considered to be questionable and of inconsistent quality and the credibility of the work is usually questioned. The authors may be forced to retract their work from such journals, to resubmit and get it reviewed in a standard journal or otherwise the work will be considered as not genuine. In effect, it ostensibly wastes the efforts put in getting funds, conducting the research and the involvement of human or animal volunteers.^{1,6,7}

No Archiving facility: Predatory journals lack archiving facility for their published articles in sites like PubMed Central, making it hard to find in the future. Since the journals are established exclusively on monetary basis, they are liable to stop publication when profits diminish.^{1,6,7}

Damages the reliance on published research: Predatory journals damage the trust and reliance that the readers, layman and public, have on published research.^{1,6,7} Additionally, most doctors rely on published work for practice of evidence-based medicine, thus leading to detrimental decisions.

Why Do Authors Choose to Publish in them and Why Predatory Journals Flourished?.

Lack of experience and awareness: Early researchers lack experience in the publication process and may not be aware of the existence of predatory journals. Alternatively, the authors themselves may not be confident about their research and fear rejection from standard journals and take the easy way out to publish in predatory journals, enticed by their easy acceptance policy.^{1,2}

Rejection in serious journals: Many authors become exasperated when their papers are rejected by serious journals or when significant changes are suggested for their articles. Predatory journals offer them an undemanding way out for publishing their work.^{1,2,4,7,8}

Effortless solution to get ahead in the rat race of publication: The possibility of a rapid publication attracts the academicians since these journals promise easy and early acceptance rates, especially to some authors who may want to avoid the peer review process. The authors embrace these journals due to these reasons and disregard the lack

of publishing ethics to achieve their aspirations; i.e. to gather a good number of articles to their credit in a short period.^{1,2,4,7,8}

Quantitative evaluation: In most universities, the quantity or the number of publications is considered for promotions and incentives that has encouraged this menace.^{1,2,4,7-9}

How Can Authors and Institutions Identify a Predatory Journal and Protect Themselves from this Academic Threat?

Authors mostly prefer to publish in legitimate journals. This holds true even for their affiliated institution as well as external agencies that fund their research work. The avenues that will help to differentiate between a legitimate and a predatory journal include:

- Beall's list which is still considered as significant option for identification of predatory journals though it does have its own limitations.^{2,3}
- The open access publications considered to be authentic have been listed in the directory of open access journals which can be another approach.¹⁰
- Another approach is the "Think Check Submit" checklist.¹¹

But none of these initiatives are without error in determining the status of a journal; so, the onus still lies on the authors. Beall in 2012 said that the authors submitting their publications need to develop publishing literacy that enables them to identify fake journals. Though the assessment may be individualized, a thorough evaluation of the journal websites for indication of the "warning sign" characteristics will aid in making an informed decision. Presence of more "red flags" should make you wary about consideration of that journal for publication. Authors should prioritize quality research and should aim to publish only in reliable journals.²

Measures to Curb the Menace

Ethical publication: The editors and publishers of standard journals have set up the Committee on Publication Ethics (COPE) that aims to uphold integrity in publications. COPE intends to encourage ethics in publication among authors as well as publishers. A publisher wanting to publish a legitimate journal in their field will go to great lengths to ensure that it will publish quality work following stringent peer review process and follow the guidelines put forward by COPE. The uprightness involved in the publication process will in time aid in distinguishing legitimate journals from predatory publishers.¹⁻³

Qualitative evaluation: A shift is called for in academic evaluation systems where the focus should be on the quality of the publication rather than on the number of publications to assess the research dimensions of the authors. This could serve as an enduring approach to guard the academic world against these journals.¹⁻³

Creating awareness: The senior scientists mentoring junior

researchers must make them aware of the presence of such fake journals and the perils of publishing in them. The Institutions should also take the onus of educating their research faculty and students about identification of predatory journals and to make them understand the consequences associated with publishing in these types of journals.¹⁻³

Legal action: Legal challenge could be another approach for controlling these journals. The OMCIS group is facing a legal challenge by the US Federal Trade commission for their deceptive practices.¹⁻³

Indian Scenario

India has been rated as a country with high scientific achievement; however, several articles in recent years have shown that Indian academicians are one of the chief partakers of predatory journals. Also, a majority of predatory publishers originate from India.^{1,12}

This trend could be attributed to the increased demand of research papers appointments as well as promotions, lack of awareness regarding predatory journals, lethargy of evaluators leading to ignoring these journals during academic evaluation, lack of infrastructure and research facilities in most institutes leading to preliminary researches that may not get published in good journals. Additionally, it is a mandatory requirement for research scholars to publish at least 1–3 articles so that they can submit their thesis. All these have led to increased growth of predatory journals and underline the dearth of scrutiny of published articles in India.^{1,12}

To combat this academic problem, the University Grants Commission (UGC) has put forward a list of trustworthy journals recently. However, it has been noticed that this white list may still have some predatory journals and fails to consider good journals indexed in PubMed showing Indian academic community in a poor light.^{1,12} We are in agreement with a recent editorial that suggests that it is better to provide a list of reliable indexing organizations to publish rather than giving a list of journals.¹

Authors' Contribution

PVA did the review of literature, data collection and manuscript preparation. HK did the data collection and manuscript editing.

Conflict of Interest Disclosures

None to be declared.

Ethical Statement

Not applicable.

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