



# Misinformation through predatory practices

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## Abstract

Misinformation in science can lead to erroneous conclusions with far-reaching ramifications on the impact of a given field and eventually to erosion of public trust in science. Predatory journals, the publications with dubious policies and compromised processes for review, present questionable data not rigorously evaluated. A proliferation of these journals threatens the transparency and validity of the scientific publishing system. The predatory journals are sometimes difficult to identify and both experienced and inexperienced researchers fall for them. The authors lose the opportunity to present data in credible journals with excellent viewership. The peer-review process being weak in these journals, it often leads to publications where the evidence provided is not strong enough to withstand the scrutiny of experienced researchers. Although a substantial fee is charged for publication, the quick time frame, and easy acceptance draw researchers. In a nutshell, misinformation spread through these journals, the hijacked journals and predatory conferences is damaging the entire scientific enterprise. With information on predatory journals available at trusted sites, the scientific community should make themselves aware of the journals with questionable reputations and stop publishing in these that would help stop this industry.

**keywords** Predatory Journals · Misinformation · Predatory Conferences · Hijacked Journals

## Introduction

For the world of science to progress and make important discoveries, it is important to publish evidence-based science in credible journals. Ethically correct publishing practices with a strong base of good publications over a period of time are important for the dependability and reliability of the journals percolated in the research ecosystem. When journals are not trusted then the validity of the research published becomes questionable. The emergence of predatory journals with dubious reputations has sprung up, falsely promising good peer review and quick publication in exchange for a fee. This practice of abuse of trust has gained so much ground that a substantial number of scientists have started publishing in these journals, some unconsciously and some consciously because getting papers accepted is relatively easier than

in the credible ones. It is not only young researchers but many experienced faculty that have been deceived. One of the misleading factors has been the listing of some of these journals in credible citation indexes. As a consequence of improperly reviewed publications, substantial misinformation is generated which is both detrimental to further work in science and also as false material to the public. Referring to one study from Italy that reports about 46,000 researchers questioned, 5% of them indulged in predatory publishing (Bagues et al. 2019). According to a recent Inter Academy Partnership (IAP) document which details a global survey, indicates that 11% of 1800 respondents to their survey had already published in a predatory journal, 4% participated in a predatory conference and 6–8% had no knowledge if they have participated (<https://www.interacademies.org/publication/predatory-practices-report-English>). An analysis by *Publons*, suggests that it has, over 6000 records of reviews for more than a thousand predatory journals (Noorden 2020) and to add to this, it has non-peer reviewed documents of about 6003 prints that were republished between January 1 and April 30, on Covid 19 ([https://publons.com/publon/covid-19/?sort\\_by=date](https://publons.com/publon/covid-19/?sort_by=date); Silva Teixeira 2020). So, this is a real cause of worry. These papers were not peer-reviewed and did not pass the test of peer review, but there is no dearth

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of scholars, citing these papers. Scientists are losing the opportunity to publish in a trustworthy journal and get their data to be appreciated in the proper forum. Besides a quick publication, another attraction is the possibility of getting a positive assessment during review for promotion or during consideration for higher employment.

The proliferating industry of predatory journals and conferences has become excellent business ventures leading to more and more expansion. The fallout is that these journals make millions of dollars from publication money. A devious way to defraud scientists and reap the benefits of research that is carried out with the help of government grants. This practice may have originated from profit publishing with the publishers of high-impact journals charging high amounts as article processing fees and open access charges making publishing in the high-impact journals out of reach of many scientists in less-privileged settings. The previous practice of not-for profit publishing by Societies and Academic institutions has largely been replaced now. With the evolution of the internet and improved facilities for easy access, this was a problem that was going to come from communities involved in dubious business ventures. During 2011 and 12 there were very few predatory journals and now a decade later, the number of such journals has crossed 5000. We now have hijacked journals as well, through fake IDs. It is suggested that for more information on predatory practices and how to avoid such journals, one recent article in *Current Science* based on a report from the IAP may be checked (Lakhotia 2022).

### The questionable practices

To start with, there is no clear-cut definition for these journals. The journals do not have clearly defined policies and all regulations are nebulous at best. They do not follow established norms of review by competent reviewers, evidences are not rigorously checked, plagiarism check is not done, ethical approval is not evaluated. Thus, they generate publications that are inferior and potentially capable of providing misinformation. Since the policies of the journals are not aptly defined, the publishers, therefore try to exploit the open access publishing model by charging exorbitant fees but failing to provide mandatory editorial services. Because of proactive activities of societies and publishers to identify and blackmark these journals, they have evolved methods to avoid detection. For example, some of the journals have successfully listed themselves in standard indexing databases. (Dadkhah and Bianciardi 2016; Grudniewicz et al. 2019). These journals may have fake ISSN numbers, false web and postal addresses that are either bogus or stolen. About 40% of the journals are like that, with a non-existent address in the US or an address of a vacant plot somewhere.

This makes it hard to detect what is a predatory journal and how to spot it. Many COVID-19 papers are open access and the public can freely access them. This has the potential to affect public health. One good example is the use of chloroquine and hydroxychloroquine to treat COVID-19 (Pastick et al. 2020).

While these practices thrive, there are checks and balances that can identify poor publications and predatory journals. UGC-CARE provides an active list of journals where possible predatory publications may be identified (<https://ugccare.unipune.ac.in/apps1/home/index>). The Yale University library has come out with a list in 2022 to provide a guide to identifying major journals in all fields (<https://guides.library.yale.edu/c.php?g=296124&p=1973764>). Researchers should be encouraged to read the reports and reviews to decide on the journal for publishing. Publons provide some data on how to search for credible publishers (<https://publons.com/about/publisher-checklist>).

### The contributory factor

There is a sea change in the behavior of the scientific community in response to the transformation of the age of communication. As a community, we mostly find articles using search engines or information coming from social media which is available easily. The information spreads fast as you can also communicate online and transmit your data to collaborators. This system of open access and dependence on online access is being exploited by the predatory journals and it is happening in all disciplines of science. A number of these journals also serve as representatives for distinct groups with special objectives to promote their ideas, under the semblance of publishing scientific papers. The idea to propagate misinformation about issues that deserve attention for the betterment of the living conditions may have severe consequences, for example, misleading facts about preserving biodiversity or vaccine acceptance are damaging to the cause of science and eventually, the welfare of the society. It is not uncommon to receive emails as we all do, for example, to be a member of the editorial board or an invitation by journals to write an article or to attend a world-class conference as a speaker. This becomes attractive to many and thus the practice thrives.

### The drivers of predatory publishing

In one word, the obvious motivation for predatory journals is the incentive of making money. The paying of high amounts for publishing a paper or a review yields a substantial sum for the perpetrators. As long as this practice is allowed to thrive, the industry will grow and evolve many

means to defraud the legitimate scientific enterprise. One of the attractions of yielding to these journals is the relatively easy acceptance and quick publication, a necessity for many young faculty at various places to advance in their career. These journals also form a base for inadequately trained reviewers who can post their assignment as a credit point in their biodata. For predatory conferences, the lure of presenting papers in a forum supposedly of repute draws the researchers. This cycle of the journals or predatory conferences making money and the authors getting credit for publications drives the entire enterprise.

## The effect

Ramification of misinformation received through these journals are huge with serious implications in various fields of science and scientists, who are mostly affected by them. At the basic level, these are primarily inexperienced researchers who learn the principles of ethics and integrity as they progress in their career. At times they fall prey to these journals because they are not well informed and are confused between the sources of reliable and unreliable information. The process of predatory publication is fast because there is no defined review process or the process is a mere formality with reviewers who are not competent enough, which makes the system compromised. The young scientists need to identify the predatory journals because by publishing in these journals they are losing the opportunity to publish their hard-earned data in established accepted journals for better audience. Publishing in credible journals also will have a boost in their careers as predatory journals are identified by interview committees and evaluators and publications in these would harm reputation of the scientist. The seemingly believable websites and enticing invitations to contribute, often mislead a young mind. Inexperienced researchers yield to such temptation of a quick publication or participation in a good conference, early in their career and make these mistakes through participation. At times the fakery is so effective that even some experienced scientists get motivated and thence compromised.

## Possible processes to avoid predatory activities

Predatory publishers are good at following new trends and therefore easily fool the early career researcher. One emerging trend in predatory publishing that researchers and institutions should be wary, is journal hijacking where scammers appropriate the URLs of legitimate high-ranking journals. And so far, eight hijacked journals exist. In this, there is a

definitive role of a Publications Officer or the librarian at the institutes or Universities to educate the early career faculty or even senior faculty about these predatory publishing journals. A serious and worrisome fact is that the databases of PubMed, and the Scopus includes some predatory journals. It therefore is more than necessary that these databases are somehow made free of such contamination.

## The consequences

The grave consequences of a failure on our part to address predatory practices will lead to a build-up of compromised information that will be detrimental to scientific developments and extremely damaging to the entire scientific enterprise. This is happening at the expense of scholarship. The feeding of misinformation in the making of public policy may not necessarily be based on solid evidence proven faulty later, will lead to the generation of data that will not be sustainable. This leads to false information seeping into the scientific literature. Potentially, the researchers could use the incorrect information to build new projects deviating from valid data leading to wastage of money, materials and manpower. The dynamic mode as to how this practice evolves designed by some ingenious fraudsters is a formidable challenge for the entire scientific enterprise.

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