

# Identification of Fraudulent Scientific Journals

## Identificación de Revistas Científicas Fraudulentas

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**ABSTRACT:** There is a growing need to produce scientific publications in universities, with the resulting increase in manuscripts submitted for review to scientific journals. Open access, a model designed to increase the dissemination of knowledge, has become a business model for certain fraudulent or predatory journals, which see the payment of publication rates by the authors as a money-making venture. These journals take advantage of some researchers' lack of knowledge about the types of journals and how the normal publishing process of a serious journal works, characterized by a peer review of the scientific work, a process that usually takes several months. Predatory journals are a real threat, for both the quality of scientific articles published and for the authors, who pay high prices to have their work published in journals of low or no quality. The aim of this article is to describe the characteristics of the existing scientific journals and highlight aspects that authors should consider to identify and avoid fraudulent journals.

**KEY WORDS:** predatory editorials, business, journal impact factor, open access publishing, scientific misconduct.

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## INTRODUCCIÓN

Universities are creative institutions of knowledge, and part of their prestige is based on the dissemination of the results of the scientific research they produce in all areas of knowledge. Thus, scientific activity and its product, scientific publications, are inherent to a university (Túñez-López & Martínez-Solana, 2018), which, with the aim of fulfilling the state accreditation demands and maintaining national and international prestige, delegates the function of creating and disseminating knowledge to academic personnel (García-Puente, 2019). In Chile, the National Accreditation Commission (CNA-Chile) is the organization charged with verifying and promoting the quality of universities and scientific production is considered one of the main indicators of quality.

This has brought about the increasing need for universities and research centers to produce scientific publications, with the resulting increase in articles submitted for review. The great demand to publish has meant that prestigious international journals reject most manuscripts exclusively on the basis of reading the abstract, publishing only a small number of articles

compared to those they receive for evaluation. Certain prestigious international journals report rejection rates over 80 % (Jiménez, 2013). This is very discouraging for researchers who spend a considerable time planning projects, obtaining funds to finance the research and conduct it.

Historically, journals have charged readers the publishing costs, either charging for the acquisition of articles in printed format or today via the Internet by electronic access. With the aim of democratizing access to scientific data, open access arose in the 1990 (Bertoglia & Águila, 2018), where the publishing costs are covered by the authors of the studies, who pay for their work to be published. Open access gives readers free access to the plaintext of articles, which favors the dissemination of the study results (Jiménez-Contreras & Jiménez-Segura, 2016). The concept of open access respects and promotes the principles of scientific publication, peer review and ethical standards (Bertoglia & Águila). However, over the years and given the unmet demand to publish, certain journals saw in open access a business model (García-Puente). These

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journals, called predators, seeking to attract authors and obtain economic gains from the publication of articles, offer rapid dissemination and publication of a large number of scientific works (Laine & Winker, 2017) and they often lack a peer-review process of the manuscript, which jeopardizes the quality of the scientific work (Richtig *et al.*, 2018).

There is no single, clear definition of a predatory journal. Studies on the subject are consistent in indicating that they are journals that strive to appear that they have scientific support, guarantee unusual speed in the publication process, sometimes imitate the name of a prestigious journal or even its webpage, send massive chain e-mails inviting scientists to publish, among other characteristics (Marqués, 2013; Richtig *et al.*, 2018; García-Puente). These journals benefit from general ignorance among researchers about the different types of journals that exist and their need to publish in international journals due to the pressure of review processes. One study indicates that almost 100 % of medical personnel actively read scientific articles and 90 % are familiar with the open access system (Richtig *et al.*, 2019). Nevertheless, the existence of predatory journals is known by a smaller percentage (69.7 %), and this knowledge is significantly lower among researchers with a lower number of publications, publications with less impact and/or with recent publications (Richtig *et al.*, 2019).

The aim of this article is to describe the characteristics of existing scientific journals and highlight aspects that authors should consider in order to identify and avoid fraudulent journals.

## RESULTS

Next, aspects and characteristics of a scientific journal are analyzed that should be analyzed by authors before sending a manuscript in order to identify fraudulent journals.

**Review of a journal's indexation.** Indexes are entities that selectively store and record scientific documents and organize them systematically to enhance the visibility of the data, facilitate their search, dissemination and recovery (Paradigma, 2012). For a journal to be included in an Index, they must fulfill certain criteria, such as frequency of publication, having among other things an editorial committee, that the published articles fulfill standards of scientific communication and pass

through a peer review, among others. Thus, the indexation of a journal is an indicator of its quality and prestige, since it has been listed in the database of an Index that has a careful selection process (Paradigma).

In the medical and life sciences there are several Indexes, detailed next: The WoS (Web of Science), until recently called ISI (International Science Index) or ISI-WoS, produced by Clarivate Analytics, is probably one of the largest. The WoS is housed on the Web of Knowledge platform and contains publications that are mainly restricted access. The Web of Knowledge also houses Journal Citation Reports (JCR), which measures a journal's impact based on the citations received by articles published and picked up in the Web of Science (WOS). The JCR impact factor of a WoS journal in a certain year is calculated by the citations received in that year determined by the number of articles published in the two years prior divided by the number of articles published in those two years. The JCR impact factor is one of the most recognized internationally.

Another prestigious index is Scopus, which are databases of the greatest scientific literature in the world, and which belongs to the Elsevier publishing house. Its impact metrics include SCImago Journal Rank (SJR), which like JCR distributes the prestige of a journal among the total number of its citations.

In Latin America, Scielo (Scientific Electronic Library Online), Latindex (Regional Cooperative Online Information System for Scholarly Journals from Latin America, the Caribbean, Spain and Portugal), Lilacs (Latin American and Caribbean Literature in Health Sciences), Virtual Health Library (BVS) stand out, among others, and most of them contain open access journals. These Indexes are the fruit of the cooperation among different institutions in Latin America countries and endeavor to make the research conducted on the continent more visible. Scielo contains a metric called the SciELO Citation Index (SCCI), integrated into the WoS platform, which provides information on the impact of an article from a journal contained in the collection.

The Directory of Open Access Journals (DOAJ) is an independent directory that indexes and offers access to open access peer-reviewed journals with quality control. Thus, the DOAJ serves to identify open access journals that fulfill quality criteria, although not all open access journals of quality are indexed in the DOAJ. There are predatory journals that falsely claim to be indexed in the DOAJ. The authors of the journal should access the DOAJ website and look for the name of the

journal to assess whether it is indeed indexed in the DOAJ.

Each of the Indexes mentioned has a webpage where the journals contained in their collection are shown in addition to their impact factor, if applicable.

It should be taken into consideration that not all non-indexed open access journals are predatory journals. New journals must pass through a validation process and fulfill a series of requirements before being included in the various Indexes, a process that can take years. Accordingly, it is worth determining the origin of the journal to confirm or reject its seriousness. University journals or those from recognized societies and research institutes tend to be journals that seek to position themselves and fulfill scientific standards in search of indexation and recognition. It should be noted that it is likely that the publication costs such journals charge authors are lower, since the journal is not seeking economic gain, but only to cover the costs of publication.

When the plan is to submit a scientific article to a journal, it is highly advisable to review whether it is indexed in a database and its impact factor. This information must be reviewed directly on the Index's website and not on the journal's website. Then, the information contained in the Index must be checked against the information contained on the journal's website to detect possible inconsistencies. Special attention must be paid to the following characteristics:

- Review the name of the journal. It is common for predatory journals to try to imitate the names of prestigious journals.
- Review the impact factor and the quartile to which the journal says it belongs. It is common for predatory journals to report false impact factors or invent metrics that have no validity or recognition beyond the journal or publisher itself. Thus this, it is imperative that the information on the impact factor be from a reliable source, i.e., the web of the Indexes where the journal is indexed.
- Review the ISSN. The ISSN (International Standard Serial Number) is an internationally recognized numerical code for the identification of serial publications. The ISSN International Centre is the body that grants the number that certifies the existence of the scientific journal, facilitating its identification in the country of origin and its international assessment. The ISSN reported by the journal must be checked against the one that appears in the Index where it is indexed.

**Mass invitations.** It is common for predatory journals to send mass invitations to researchers' e-mails to invite them to publish in the journal on a wide variety of subjects (Ball *et al.*, 2018). These invitations can be personalized, i.e., directed to the researcher's name, and sometimes they refer to a previous work of the invited author, mentioning how impressed the editorial committee is with the author's work, the reason for extending the invitation. The invitation ensures the review and acceptance of the manuscript in absurdly reduced terms, sometimes less than a week, after a supposed double-blind peer review. These invitations tend to be accompanied by an Index list in which the journal at issue is, Indexes that do not exist or are as fraudulent as the journals, since they do not fulfill the strict criteria of recognized Indexes. The Copernicus Index has been described as an agency of doubtful indexation and at the moment there is some discussion as to its credibility (Mondal & Mondal, 2019). This Index contains several tens of thousands of indexed journals and the number of total journals increases every day. Another case is to make reference to institutions recognized in research, but they are not Indexes, as is the case of Publons.

**Webpage spoofing of internationally prestigious journals.** Some predatory journals imitate the website of internationally recognized journals. In these cases, the website of the predatory journal is very similar or almost identical to the original one, but there are usually small differences in the name of the journal, which can happen inadvertently. A way to identify them, in addition to the careful review of the name and editorial committee as well as of the characteristics (impact factor and ISSN) described on the page against the characteristics described by the Index where it is indexed, is that the acceptance of the manuscript is probably quite fast (in a serious journal the article review process usually takes several months), and although reference is made to the peer review process, the acceptance of the manuscript is immediate, and does not come accompanied by a letter of suggestions made by the reviewers. Additionally, the publication costs tend to be very high.

**Beall's List and other lists that expose predatory journals.** Beall's List was a list that denounced publishers of predatory open access journals, created by University of Colorado librarian Jeffrey Beall. The list denounced publishing groups of open access journal with no peer review (Mimouni *et al.*, 2017) and that publish any article with the only condition being that the authors pay the open access fee. This list

garnered great prestige and many scientists used it to detect predatory journals.

In 2013 John Bohannon, correspondent of Science, sent more than 300 fake scientific manuscripts to several open access journals, many of which were published by publishers on Beall's List. Of the publishers that completed the review process, 82 % accepted the article. However, Beall had to deactivate his list in 2017 due to a defamation lawsuit started by some journals that claimed Beall's List erroneously identified almost 1 in every 5 journals (Mimouni *et al.*), which indeed did reject Bohannon's fake articles.

Beall's List was updated up to its closing, and continues to be present on the Internet and authors may still consult it. For this, one must go to the webpage of the journal at issue, look for the journal's publisher, information that is usually in the "about this Journal" section and look for the publisher's name in the search bar on the Beall's List webpage. If the publisher is on Beall's List, all the journals it publishes will be considered predatory. Beall's List will eventually become obsolete, but due to its success and importance there are currently several initiatives to continue with the work to denounce predatory journals, such as Cabell's Blacklist (Strielkowski, 2018).

## CONCLUSION

Predatory journals are a real threat, for both the quality of the scientific articles published and for the authors, who pay high prices to have their work published in journals of low or no quality. The authors must know how to identify these journals in order to avoid them.

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**RESUMEN:** Existe una necesidad creciente de producir publicaciones científicas en las universidades, con el consiguiente incremento de manuscritos enviados a evaluación a las revistas científicas. El open access, un modelo originado para aumentar la difusión del conocimiento, se transformó en un modelo de negocio para ciertas revistas fraudulentas o depredadoras, que vieron en el pago de las tasas de publicación por parte de los autores una oportunidad de ganar dinero. Estas revistas se aprovechan del bajo conocimiento que tienen algunos investigadores sobre los tipos de revistas existentes y sobre cómo funciona el proceso editorial normal de una revista seria, que se caracteriza por una revisión por parte de pares del trabajo científico, proceso que suele durar

varios meses. Las revistas depredadoras son una amenaza real, tanto para la calidad de los artículos científicos publicados como para los autores, que pagan elevados precios por la publicación de sus trabajos en revistas con bajo o ningún estándar de calidad. El objetivo de este artículo es describir las características de las revistas científicas existentes y resaltar aspectos que los autores debieran considerar para identificar y evitar revistas fraudulentas.

**PALABRAS CLAVE:** Editoriales depredadoras; Negocios; Factor de impacto de revistas; Publicaciones de acceso abierto; Mala conducta científica.

## REFERENCES

- Ball, S.; Kopel, J.; Alexander, R. & Nugent, K. Solicitation for article submission by electronic journals. *Proc. (Baylor Univ. Med. Cent.)*, 31(4):443-6, 2018.
- Bertoglia, A. M. P. & Águila, A. A. Revistas depredadoras: una nueva amenaza a las publicaciones científicas. *Rev. Med. Chile*, 146(2):206-12, 2018.
- García-Puente, M. La epidemia de las revistas depredadoras. *Rev. Pediatr. Aten. Primaria*, 21(81):81-5, 2019.
- Jiménez-Contreras, E. & Jiménez-Segura, J. J. Las revistas depredadoras, una nueva epidemia científica. *Cienc. Enferm.*, 22(2):7-12, 2016.
- Jiménez, M. P. J. Revistas científicas y frudes. *Enseñ. Cienc. Rev. Investig. Exp. Didact.*, 31(2):271-72, 2013.
- La Indexación de las Revistas Científicas. *Paradigma*, 33(1):5-6, 2012.
- Laine, C. & Winker, M. A. Identifying predatory or pseudo-journals. *Biochem. Med. (Zagreb)*, 27(2):285-91, 2017.
- Marqués, A. Revistas depredadoras. *Semin. Fund. Esp. Reumatol.*, 14(4):95-6, 2013.
- Mimouni, M.; Braun, E.; Mimouni, F. B.; Mimouni, D. & Blumenthal, E. Z. Beall's List Removed: what stands between us and open access predators? *Am. J. Med.*, 130(8):e371-2, 2017.
- Mondal, H. & Mondal, S. Pressure to publish: Index Copernicus and predatory journals are helping (?) academicians. *Indian Dermatol. Online J.*, 10(3):332-4, 2019.
- Richtig, G.; Berger, M.; Lange-Asschenfeldt, B.; Aberer, W. & Richtig, E. Problems and challenges of predatory journals. *J. Eur. Acad. Dermatol. Venereol.*, 32(9):1441-9, 2018.
- Richtig, G.; Richtig, E.; Böhm, A.; Oing, C.; Bozorgmehr, F.; Kruger, S.; Kiesewetter, B.; Zielinski, C. & Berghoff, A. S. Awareness of predatory journals and open access among medical oncologists: results of an online survey. *ESMO Open*, 4(6):e000580, 2019.
- Strielkowski, W. Predatory publishing: what are the alternatives to Beall's list? *Am. J. Med.*, 131(4):333-4, 2018.
- Túñez-López, M. & Martínez-Solana, M. Y. Impacto de las editoriales y las revistas "depredadoras" en el área de Comunicación. *Hist. Comun. Soc.*, 23(2):439-58, 2018.

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