

MINIREVIEW – Professional Development

# Due diligence in the open-access explosion era: choosing a reputable journal for publication

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E-mail: [yondell.masten@ttuhsc.edu](mailto:yondell.masten@ttuhsc.edu)**One sentence summary:** Faculty, researchers, scientists, and professionals need to ensure scholarly work is submitted to reputable vs. predatory open-access publishers for publication.**Editor:** Beatrix Fahnert

## ABSTRACT

Faculty are required to publish. Naïve and “in-a-hurry-to-publish” authors seek to publish in journals where manuscripts are rapidly accepted. Others may innocently submit to one of an increasing number of questionable/predatory journals, where *predatory* is defined as practices of publishing journals for exploitation of author-pays, open-access publication model by charging authors publication fees for publisher profit without provision of expected services (expert peer review, editing, archiving, and indexing published manuscripts) and promising almost instant publication. Authors may intentionally submit manuscripts to predatory journals for rapid publication without concern for journal quality. A brief summary of the open access “movement,” suggestions for selecting reputable open access journals, and suggestion for avoiding predatory publishers/journals are described. The purpose is to alert junior and seasoned faculty about predatory publishers included among available open access journal listings. Brief review of open access publication, predatory/questionable journal characteristics, suggestions for selecting reputable open access journals and avoiding predatory publishers/journals are described. Time is required for intentionally performing due diligence in open access journal selection, based on publisher/journal quality, prior to manuscript submission or authors must be able to successfully withdraw manuscripts when submission to a questionable or predatory journal is discovered.

**Keywords:** open access; predatory journals; predatory publishers; characteristics of ethical and unethical publishing practices; due diligence activities for selecting reputable journals

## INTRODUCTION

An explosion of open-access journals and publishers has created both opportunities and dilemmas for scientists and scholars in discriminating reputable journals from predatory journals for dissemination of scholarship. Beall noticed the explosion of predatory open-access publishers and journals in 2012 (Butler 2013). The number of predatory publishers on Beall's list increased continuously from 18 in 2011 to 923 in 2016 (Table 1; Beall 2016; Narimani and Dadkhah 2017).

## BACKGROUND

Traditionally, scholarship was disseminated through what is considered today to be traditional, hardcopy journals, known as the traditional-subscription or library model of publishing (Shamseer et al. 2017) where the reader paid for access to journal content. Internet availability of electronic publication added the author-pays model to publishing modalities (Shamseer et al. 2017) and created the opportunity for predatory publishers to exploit the open-access model of

Received: 18 May 2017; Accepted: 25 September 2017

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**Table 1.** Five-year increase in predatory publishers (Beall 2016; Narihani and Dadkhah 2017)

Year	Number of publishers
2011	18
2012	23
2013	225
2014	477
2015	693
2016	923

publishing for personal gain through collection of article publication and/or processing fees without providing or minimally providing expected services (peer review, archiving, indexing). Thus, the purpose of this Minireview about choosing journals for scholarship publication is to alert novice, naïve (early career), or 'in-a-hurry' scientists and scholars about recognizing the differences between reputable and questionable/predatory journals, as well as to provide suggestions for avoiding manuscript submission to questionable/predatory journals.

### The beginning of open-access publication: open access initiatives

Over 15 years ago, a cadre of scientists and scholars met in Budapest on 14 February 2002 to create the Budapest Open Access Initiative (BOAI) in support of open-access publishing. The purpose was to make possible free, unrestricted (no barriers to) access to electronically disseminated, peer-reviewed journal publications for the world-wide public. Sharing learning inherent in research literature with 'rich and poor' alike was believed necessary to establish a foundation for enhancing scholarly conversations and promoting usefulness of primary scientific literature (BOAI 2002). Additionally, BOAI defined open access as having 'free availability [of primary research] on the public internet, permitting any users to read, download, copy, distribute, print, search, link to the full texts ... or use ... for any lawful purpose without financial, legal, or technical barriers' (BOAI 2002, para. 3).

The BOAI follow-up meeting occurred on 11 April 2003 in Bethesda at the Howard Hughes Medical Institute's headquarters. Individual scientists and scholars rather than representatives of institutions and organizations attended. The follow-up session on 20 June 2003 to accept the 11 April drafts of the standard and statements of support for publication of peer-reviewed, original reports of original research in biomedical sciences was attended by an enlarged group of scholars, scientists, librarians and publishers as individuals and as representatives of institutions and organizations. Affirmed statements include the Bethesda Statement of the Institutions and Funding Agencies Working Group, Statement of the Libraries and Publishers Working Group, and Statement of Scientists and Scientific Societies Working Group (each is available online at <https://legacy.earlham.edu/~peters/fos/bethesda.htm>).

At a follow-up meeting 10 years later, BOAI reaffirmed the statements of principle, strategy and commitment, plus established goals for the next 10 years (BOAI 2012). Ongoing meetings, e.g. Berlin Declaration on Open Access, continue to occur for supporting affirmations of BOAI. The first or landmark Berlin Declaration on Open Access meeting of international experts occurred on 22 October 2003, organized by the Max Planck

Society and European Cultural Heritage Online project to support use of the open-access model for publication of scientific knowledge. Over 300 international institutional representatives developed and signed the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities (2003) document outlining steps to promote the internet as the medium for dissemination of global knowledge. Ongoing meetings maintain BOAI support of open access to primary research along with calls for authors to publish research results on the internet without payment expectations to achieve free user access for unrestricted use and accelerated production of the results of scholarship and research.

### Awareness of the 'dark side' of open-access publishing

While creators and signers of BOAI, Bethesda Statements and the Berlin Declaration perceived open-access publishing as the medium for making primary research accessible to the world for the public good, some individuals saw open-access publishing as a method for achieving personal gain. The list of questionable and predatory publishers was begun by Beall in 2011. Beall coined the term 'predatory' to describe practices of publishing journals for exploitation of the author-pays, open-access publication model through charging authors publication fees for publisher profit without provision of expected services, e.g. expert peer review, editing, archiving and indexing published articles (Bowman 2014). The open-access movement became a useful strategy for for-profit publishers to lure unwary scholars to submit manuscripts for fast online publication using email blasts. Scientists, scholars, authors and faculty began regularly receiving numerous email blasts requesting manuscript submission, service on editorial boards, presentations at future conferences and conference attendance at a number of venues around the globe (Bowman 2014; Clark and Smith 2015; Beall and DuBois 2016).

### Faculty open-access predatory publication experiences

Unfortunately, not every enticing email invitation originates from a reputable source. Thus, some naïve/early career and/or inexperienced faculty have fallen prey to the convenience of invitations for rapid scholarship publication or been thrilled by scholarly podium presentations only to become aware, after-the-fact, that the journal or conference was of questionable or unreliable quality. Faculty publishing in questionable or predatory journals are usually unaware of publisher/journal quality until review committees discount such publications as documentation for achievement of required promotion and/or tenure criteria. For example, a couple of faculty at a local university unknowingly submitted manuscripts to predatory journals for publication. A larger number of faculty were prevented from 'taking the bait' because the present authors have made many local and one national conference presentations to warn professionals of the predatory publication trap. Writing teams of accepted predatory journal submissions consisted of both 'junior' and 'seasoned' faculty and the publication submissions occurred prior to the first local presentation about the existence of predatory publishers and journals. As a result of the local presentations, each of the present authors receives weekly to monthly email requests from faculty asking whether a specific invitation could be predatory.

Another example is the case of a local seasoned faculty member (editor of a reputable journal) who was listed as an

editorial board member of a questionable/predatory journal without consent or awareness. Thus, faculty experiences with predatory publishing can become a highly motivating stimulus for alerting others to the existence of less than reputable journals/publishers.

### Predatory open-access studies

A few scientific and case studies have been conducted about predatory journals/publishing (Shen and Björk 2015). Shen and Björk (2015) conducted a longitudinal study to 'estimate the overall size of predatory publishing; examine how it has grown in the last few years; and measure key characteristics of this market' (p. 1). The authors found 11 873 journals were available for 996 publishers and estimated 33% of the journals were inactive or served as empty placeholder journals. A low percentage of predatory publishers (0.5%) and authors (2.2%) was found in South America. An estimated geographical spread of predatory authors showed India topped the list and countries with largest increase in contributions to predatory journals were Nigeria (1580%), India (277%) and Iran (70%). Study results revealed a little over 75% of publishers were located in the three regions of India (34.7%), Asia excluding India (25.6%) and Africa (16.4%) with only 9.2% located in North America and 8.8% in Europe (Shen and Björk 2015).

Oermann and colleagues conducted a study in 2016 to identify predatory nursing journals. The research team found 140 predatory nursing journals produced by 75 publishers with most journals being inaugurated in the previous 1–2 years. Another interesting finding was that many journals published one or two volumes and then ceased to publish additional volumes or published only a few manuscripts and/or issues after the first volume. Additionally, manuscript scope per volume varied widely, often ranging in content from dentistry and medicine to nursing. Authors acknowledged such practices as receipt of email invitations to publish in predatory journals and inability to withdraw manuscripts from publication as strategies used by predatory publishers. The research team concluded there are predatory journals in nursing literature and at each publication process step from invitation response to actual manuscript publication, 'red flags' previously identified in literature about predatory publishers were present. 'Red flags' included lack of transparency for editorial processes and misleading website information used to market the journals. A major concern of the research team was the application of research findings published in questionable/predatory nursing journals to improve nursing practice and provide 'evidence-based', safe nursing patient care. Nurses expect research results published in nursing journals to 'adhere to the highest standards of publishing excellence' for practice applications and enhancement of student learning (Oermann et al. 2016, p. 624).

Shamseer and colleagues (2017) conducted a cross-sectional study to compare characteristics of biomedical journals. The journals were categorized into three types: potentially predatory, presumed legitimate fully open-access and presumed legitimate subscription-based biomedical journals containing open-access content. Potentially predatory, designated as 'predatory' journals, were defined as journals published by single publishers included on Beall's list. Presumed legitimate fully open-access ('open access') journals were defined as full, immediate open-access journals listed on PubMed. Presumed legitimate subscription-based, categorized as 'subscription-based', journals were defined as journals listed in the *Abridged Index Medicus* (initiated prior to the digital age). One hundred journals were

randomly selected for each type of journal. Journals of each type were compared for home page and general characteristics, metrics and indexing, editors and editorial processes, publication ethics and policies, and publication model, fees and copyright characteristics. Results revealed a list of 13 evidence-based, salient characteristics of suspected predatory journals to use in facilitating education of authors about distinguishing predatory journals from presumed legitimate journals.

### Open-access publication relevancy to current and future professional/academic practice

What is the impact of publishing scholarly manuscripts in a questionable/predatory journal? Reputable publishers have consistently maintained use of ethical and reputable business, peer-review, and publication processes to provide users with reputable article publication via hardcopy subscription journals with the option for open access online publication. The primary goal for publishing professional and scholarly papers has traditionally been to disseminate research findings for application and knowledge base expansion in a field of study for use by other scientists, faculty, professionals and practitioners. Thus, a primary goal for publishing professional and scholarly papers is to expand the knowledge base for use by other professionals and practitioners. A hallmark of reputable publications is rigorous peer-review processes by experts in the field. Additionally, accessibility of open-access publications requires ongoing archiving and indexing. If publications receive only 'sham' or no peer review, other professionals are building on a questionable foundation. Likewise, if publications cannot be found because the journal is no longer maintained, publication citation disappears, archives are non-existent, or there is no index to locate publications, then other professionals, practitioners and experts in the field cannot access the publication to build on the scholarship.

The author-pays model has changed publication processes from focusing on payment from libraries and other subscribers to authors as the publishers' customers (Bowman 2014). Thus, a conflict of interest is built into the author-pays model because the publisher makes more money by accepting manuscripts by more authors for publication. Therefore, issues generated by the author-pays model in open-access publishing are about how to maintain control of peer-review and publishing processes.

### OPEN-ACCESS PREDATORY PUBLICATION DUE DILIGENCE: NEGATIVE QUALITY INDICATORS AND CHARACTERISTICS

Proliferation of predatory or questionable, as compared with reliable or legitimate, journals and publishers means faculty need to add assessment of journal quality to decision-making processes when selecting a journal for publication of scholarship. Librarians are aware of predatory publications and are most helpful in assisting faculty to avoid falling into the trap (Lake 2016). Beall (2012) identified a list of unethical practices often associated with questionable or predatory journals/publishers. Additionally, Beaubien and Eckard (2014) developed a negative and a positive list of Quality Indicators for faculty use in assessing the quality of a journal/publisher. Further, Shamseer and colleagues (2017) developed 13 characteristics of potential predatory journals. Several negative indicators and/or characteristics are discussed below.

### Lack of or unclear peer-review process and copyright

Questionable or predatory publishers typically omit peer-review processes, implement 'sham' peer view, or fail to clarify peer-review processes on the website. Publishing in predatory journals harms the scientific community, as well, by misleading authors to invest money and intellectual contributions in a journal with limited to no potential for access by other professionals (Beall and DuBois 2016). Without adequate peer review, publications are not processed through the primary form of quality control and are thus not vetted.

While copyright has traditionally been assigned to the publisher in subscription publications, such a practice is contrary to the open-access foundation of publications being easily accessible on the internet and free for use and re-use. Additionally, information about copyright may be missing from the journal website (Beall 2012; Beaubien and Eckard 2014; Shamseer et al. 2017).

### Lack of archiving and indexing

Accessibility of open-access publications require continuous archiving and indexing. Without archiving, professionals and experts in the field cannot locate publications to build on scholarship (Clark and Smith 2015). Suber, as early as 2003, emphasized the need for indexing publications for ease of location, depositing journals in maintained archives or repositories and containment of the publications in a readily open-access label. Information about whether or how manuscripts are digitally preserved is frequently missing for questionable/predatory journals and websites (Suber 2003; Shamseer et al. 2017).

### Perplexing websites

The website of questionable/predatory journals or publishers may be difficult to find or navigate, or appear to proceed 'in circles'. Information/instructions for authors and/or peer-reviewers is missing or unclear and information about author fees may be missing (the author receives an unexpected invoice after manuscript acceptance for publication) (Beall 2012). Additionally, websites may contain spelling or grammar errors or present distorted/fuzzy images intended to appear as something else (Shamseer et al. 2017).

### Enticing homepage language

Journal home page content is designed to attract prospective authors (Shamseer et al. 2017). Instead of targeting readers with content, such as highlighting new topics, predatory journal home page content targets authors. For example, content invites submissions, promises a rapid timeline to publication, and posts metrics designed to promote submissions (e.g. false high impact factor values or Index Copernicus Value) (Shamseer et al. 2017).

### Missing or unclear publisher information

For questionable/predatory publishers, information about the publishers may be omitted or unclear. Journal scope content may be too broad (manuscripts from a variety of professions with no common theme) or include non-biomedical subjects along with biomedical topics (Shamseer et al. 2017). Additionally, publishers may have a negative reputation on list-servs. Information 'about' the journal or publisher may be omitted or un-

clear on websites, with no clear indication of journal/publisher mission or connection of mission to publication content scope (Beall 2012).

### Missing or unclear editor and editorial board information

The editor may not be identified, may be the same person as the publisher or owner, or serve as editor of many journals listed for one organization (sometimes 100-plus journals). The editorial board may be missing or members may not hold the expected academic credentials common for reputable board members. The same editorial board may be used for more than one journal or board members may have coined names or names of experts not consenting to serve on the board (Beall 2012). The contact email address can be non-professional and/or non-professional-journal affiliated (e.g. Gmail or Yahoo addresses) (Shamseer et al. 2017).

### Lack of publishing operations transparency

The organization may have no policies or practices regarding digital preservation, identify no long-term business plan for organizational sustainability and begin operations with a long list of journals (all based on a similar format for each home page). There may be a disconnect between journal title and stated journal mission, use of 'national' journal names (e.g. American Journal of ..., British Journal of ...) with no connection to the nation of origin, and journal titles may be hijacked from well-known journal sites. False impact factors or other international measures of quality may be listed, spam requests may be used to solicit authors or editorial board members, or non-indexing services may be listed as the indexing services (Beaubien and Eckard 2014). Additionally, information about manuscript submission and editorial processes and policies is absent or limited. Instructions to submit manuscripts may be via email attachment rather than an online submission system (Shamseer et al. 2017). Typically, manuscript submission by email does not involve a required declaration of conflicts of interest, attestation of adherence of the manuscript to authorship standards, and assessment of author agreement with journal policies. The website may contain no instructions for manuscript retraction should the author decide after submission to withdraw.

### Article processing charge

Either low fees (less than \$150) or high fees (greater than \$3000) are suspect since the purpose of questionable/predatory journals is usually monetary gain (Shamseer et al. 2017). Additionally, journals should have a provision for waiving APCs for hardship cases (Farmer 2017). The heart of the predatory publisher payment issue is not the requirement to have to pay for having a manuscript published but rather the exploitation of the author-pays model by publishers for personal gain (Fitzpatrick 2015).

## OPEN ACCESS DUE DILIGENCE: POSITIVE QUALITY INDICATORS AND CHARACTERISTICS

To assess whether manuscripts are being submitted to reputable publishers for expert peer review and publication in a permanent, accessible archive or repository, authors

submitting manuscripts must review publisher/journal websites for evidence of quality or signs of unethical business practices, lack of integrity and insufficient funding/resources for the organization's sustainability as described above. Manuscript authors need to assess journal websites for positive as well as negative quality indicators and characteristics. Beaubien and Eckard (2014) and others, e.g. Shamseer and colleagues (2017), have identified several positive quality indicators and characteristics of reputable journals authors need to assess as discussed below.

### Intuitive website

Journal scope of content is well-defined and aligns with journal title, article content and expectation of typical professional readers of the journal, instead of containing a broad scope of content. Additionally, author instructions and guidelines, peer-review processes and reasonable but not unrealistically low APC fees are clearly posted and explained on the website. Further, authors must have the opportunity to revise and withdraw manuscripts (Beaubien and Eckard 2014; Shamseer et al. 2017).

### Clear editor and editorial board information

Editors and editorial board members are recognized experts in the field. Most editorial board members are published or will publish manuscripts in the journal over time (Nicoll 2014).

### Clear publisher information

The publisher is clearly identified and meets expected criteria for quality journals and publishing organizations. Additionally, publishers are recognized as holding membership in the Open Access Scholarly Publishers Association (Beaubien and Eckard 2014).

### Clear archiving and indexing

Documentation of ongoing archiving and indexing is evidenced by inclusion of the journal in subject databases and indices. The journal is assigned an International Standard Serial Number (ISSN), listed in the Directory of Open Access Journals (DOAJ) and registered in Ulrich's Web, Global Serials Directory (UWGSD) (Beall 2012; Beaubien and Eckard 2014).

### Journal characteristics

Journal affiliation and/or sponsorship is clearly identified and recognized as being an established scholarly society or academic institution. Content of journal articles aligns with journal content scope and meets the standards of the discipline. The journal ISSN is published, each article clearly lists a digital object identifier (DOI), and user rights for article content use and re-use are clearly presented (Beaubien and Eckard 2014).

## OPEN ACCESS DUE DILIGENCE ASSISTANCE: SELECTING A JOURNAL

What is the responsibility of the author(s) of journal publications for selecting reputable journals/publishers to disseminate research results and outcomes? Evidence of author due diligence includes assessment of both negative and positive quality indicators and characteristics described above. Several sources have

provided lists of actions authors need to complete prior to submitting a manuscript for publication.

The World Association of Medical Editors (WAME), the Committee on Publication Ethics (COPE), the International Committee of Medical Journal Editors (ICMJE) and the Council of Science Editors (CSE) advocate use of standard policies for archiving journal content, managing potential conflicts of interest, handling errata and transparency of journal processes, including policies regarding payment of fees (Laine and Winker 2017). Thus, in assessing journals for manuscript publication, authors must complete activities from the following aggregated checklist (Butler 2013; Beaubien and Eckard 2014):

- Review journal websites for verifiable contact information in addition to website content.
- Review journal publication content scope (broad vs focused and consistency with journal title and scope).
- Review editorial member credentials, prior publications, field of expertise and affiliations.
- Review publicly displayed journal policies, including author fees and copyright.
- Review some journal publications for quality and consider contacting a sample of authors to ask about personal experiences with publisher and editorial board members.
- Review prominently displayed peer-review processes for alignment with the standard peer-review process.
- Review and confirm publicized impact factor correctness in Clarivate Analytics trusted *Journal Citation Reports*.
- Review and verify journal membership in DOAJ and/or Open Access Scholarly Publishers Association.
- Review indices and databases where the journal is indexed (are databases actual indices or sites offering different types of service?).
- Review whether the journal is listed in DOAJ (after March 2014) or *Ulrich's Periodicals Directory*.
- Review the ISSN number of assigned DOI for legitimacy.
- Consider avoiding publication in journals suggested in email invitations, and avoiding volunteering to become an editorial board member of such journals.
- Consider whether ease and rapidity of the publication process is 'too good to be true'.

Additional author guidance for selecting a reputable journal and publisher are discussed below.

### 'White' lists

DOAJ provides a list of reputable journals, after March 2014. While some questionable journals listed on DOAJ were accepted prior to March 2014 when less stringent criteria were used, such journals have not been reaccepted for listing, if the more stringent criteria are not met (the journal is removed when criteria are not met). Thus, journals meeting stringent criteria are indicated on DOAJ by a green tick symbol or seal of approval (Beaubien and Eckard 2014).

The Quality Open Access Market (QOAM) is a crowd-sourced website where academics are asked to review journals and scores are applied. Since the website is a market place for scientific and scholarly open access journals, each journal is evaluated and scored according to editorial information, peer review, governance and work flow. Then the journal is categorized as strong, weaker, opportunity (to publishers) and threat (to authors). QOAM mirrors DOAJ approval processes (<https://www.qoam.eu/about>).

## 'Black' list

Beall's list of questionable or predatory journals and publishers was one strategy for quickly checking the list of questionable/predatory publishers until mid-January, 2017. However, the list is no longer available (Berger and Cirasella 2015; Silver 2017). Beall was hired as a consultant by Cabell's International in Beaumont, TX, USA, a scholarly-services firm said to be creating a blacklist of journals with potential to replace Beall's list (Silver 2017).

## Reputable sites

The Public Library of Science (PLOS) journals contain peer-reviewed open-access research articles from all areas of science and medicine ([www.journals.plos.org](http://www.journals.plos.org)). Publication criteria are based on high ethical standards and rigor. An APC for publication of manuscripts is posted on the website to pay for publication processes and does not exceed \$3000. To cover publication fees, some scientists and practitioners include open-access publication fees in budgets during budget development for grant-funding applications.

BioMed Central publishes 300 quality, peer-reviewed, open access journals in biology, clinical medicine and health ([www.old.biomedcentral.com](http://www.old.biomedcentral.com)). All articles are available immediately following publication for use, re-use and redistribution without restriction. The APC for cost of publication is posted on the website.

PeerJ is a membership model, reputable, open-access journal for publication of research articles in biological and medical sciences. Membership categories are Basic, Enhanced and Premium. At the Basic membership level, authors can publish one peer-reviewed article per year, two at the Enhanced membership level, and up to five articles per year without paying an APC at the Premium level of membership ([www.peerj.com](http://www.peerj.com)).

## Peer-review process and documentation

Another suggestion for scientists, faculty, professionals, practitioners and tenure/promotion committee members recommended by Ray (2016) is use of peer-review processes to assess quality of the journal/publisher, as well as document quality for others, e.g. tenure/promotion committees. Absence of a peer-review process or presence of a perfunctory peer-review process alerts authors to increased likelihood for the journal and/or publisher to be at least questionable. However, evidence of a quality journal or publisher includes implementation of peer-review processes in the expected manner, i.e. requires more than a few days, provides an extensive peer-review written evaluation of the manuscript, suggests options for improvement, and includes the request to revise the work and resubmit or a clear statement of rejection based on evidence of evaluation. Additionally, peer-review evidence can be shared with tenure/promotion committees to assist committees in review processes and document quality of new or fairly unknown journals/publishers.

## OPEN-ACCESS PUBLICATION EXPECTED/HOPED/ANTICIPATED FUTURE DEVELOPMENTS

Desirable and expected future developments include (i) ongoing growth of open-access publishing; (ii) education of all professionals, students and fellows about pitfalls of predatory

publishing; (iii) expansion of 'white lists' of reputable journals to assist authors in identifying quality journals for publishing; and (iv) building on the scholarship of others. Since Beall's list is no longer available for quickly checking the potential quality of a publisher or journal (Beall and DuBois 2016), other strategies need to be implemented to prevent submission of valuable manuscripts to questionable/predatory journals. A readily available online assessment of journal and publisher is available when selecting a journal for publication. The assessment consists of answering a list of questions on a checklist at the Think.Check.Submit website ([www.thinkchecksubmit.org](http://www.thinkchecksubmit.org)). The checklist guides authors through journal selection processes (Shamseer et al. 2017). Questions listed in the tool are designed to address positive and negative indicators/characteristics of reputable and questionable/predatory journals/publishers. Of the strategies described above, ensuring completion of due diligence in evaluating journals and publishers, and evaluating peer-review processes seem to be most reliable. Authors, especially senior authors, need to assist with review and submission of manuscripts prepared by more junior authors as a strategy for reducing the potential for junior authors to fall prey to publishers of questionable/predatory journals.

**Conflicts of interest.** None declared.

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