DISCUSSION PAPER



False gold: Safely navigating open access publishing to avoid predatory publishers and journals

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Abstract

Aim: The aim of this study was to review and discuss predatory open access publishing in the context of nursing and midwifery and develop a set of guidelines that serve as a framework to help clinicians, educators and researchers avoid predatory publishers.

Background: Open access publishing is increasingly common across all academic disciplines. However, this publishing model is vulnerable to exploitation by predatory publishers, posing a threat to nursing and midwifery scholarship and practice. Guidelines are needed to help researchers recognize predatory journals and publishers and understand the negative consequences of publishing in them.

Design: Discussion paper.

Data sources: A literature search of BioMed Central, CINAHL, MEDLINE with Full Text and PubMed for terms related to predatory publishing, published in the period 2007-2017.

Implications for Nursing: Lack of awareness of the risks and pressure to publish in international journals, may result in nursing and midwifery researchers publishing their work in dubious open access journals. Caution should be taken prior to writing and submitting a paper, to avoid predatory publishers.

Findings: The advantage of open access publishing is that it provides readers with access to peer-reviewed research as soon as it is published online. However, predatory publishers use deceptive methods to exploit open access publishing for their own profit. Clear guidelines are needed to help researchers navigate safely open access publishing.

Conclusion: A deeper understanding of the risks of predatory publishing is needed. Clear guidelines should be followed by nursing and midwifery researchers seeking to publish their work in open access journals.

KEYWORDS

midwifery, nursing, open access, predatory journals, predatory publishers, publication guidelines

| INTRODUCTION

Thanks to the Internet, open access (OA) scholarly publishing continues to proliferate. The central premise of the OA process is that peer-reviewed research should be available online at no cost to the

reader and with few usage restrictions (Crowe & Carlyle, 2015; Quinn, 2015). Overall, OA has worked to researchers' advantage, as readers can access peer-reviewed research as soon as it is published online (Pickler et al., 2015). Many resources from different countries and in different languages are now freely available to guide nursing and midwifery practice (Nick, 2012). However, achievement of the original goals of OA has been impeded by problems of credibility, questionable business models and long-term sustainability (Kennison & Norberg, 2014). Although the Internet offers a means by which nursing and midwifery scholars can share their knowledge, the growth of OA publishing has given rise to a dark side of scholarly publishing (Pickler et al., 2015). In 2010, librarian Jeffrey Beall coined the terms "predatory publishing" and "predatory journals" to describe the questionable marketing, business and peer review practices of publishers whose main purpose may be to profit from the fees authors pay for publication (Beall, 2013) and who fail to offer editorial and publishing services normally associated with legitimate journals (OA and subscription). Other descriptors include "dubious" and "deceptive" publishing (Oermann et al., 2016) and "pseudo-journals" (McGlynn, 2013).

Trends in predatory publishing are growing in all disciplines, including nursing and midwifery. It is estimated that more than 10,000 predatory journals produced over 400,000 papers in 2014 (Shen & Björk, 2015). Indications are that it is mostly young, neophyte researchers, often from developing countries, who unwittingly pay varying amounts of money to publish their articles in predatory OA journals, to build their publication record (Moher & Srivastava, 2015; Omobowale, Akanle, Adeniran, & Adegboyega, 2014). This has led to the suggestion that the emphasis of academic tenure and promotion on quantity rather than quality of publications may be one of the reasons that researchers risk publication in predatory journals that promise rapid review and guaranteed publication (Nelson & Huffman, 2015; Shen & Björk, 2015). However, even respected nursing and midwifery researchers have been caught in the web of increasingly sophisticated predatory publishers (Darbyshire, McKenna, Lee, & East, 2016). The risk to scholarly quality and integrity, academic standards and evidence-based practice cannot be overestimated (Darbyshire et al., 2016; Manca et al., 2017). By understanding and contextualizing predatory publishing, authors and institutions may gain confidence in their ability to make informed decisions about OA scholarly publishing, while avoiding its pitfalls.

2 | BACKGROUND

OA literature is that which is made available online, free of the price and permission barriers that frequently restrict access. The main impetus for the global campaign for OA arose from the limitations of printed journals, such as slow editorial processes and typically high prices of printed copies (Guédon, 2017). Increased access to publications is enabled through OA, particularly for clinicians, educators and researchers in developing countries, thereby maximizing the potential of the Internet as a tool for sharing scholarly research. OA publishing differs from free access: in the former, content is free to read and reuse, whereas, in the latter, content is made available at no cost to the reader, but may not be reused (Suber, 2015).

It was through the Budapest Open Access Initiative (2002) that the principles of OA were initially established in 2002. This was

Why is this research or review needed?

- Open access publishing continues to expand rapidly across all academic disciplines.
- Predatory publishing poses a threat to nursing and midwifery scholarship and practice.
- Many nursing and midwifery researchers are ill-equipped to avoid the pitfalls of predatory open access journal publishing.

What are the key findings?

- Predatory publishers use deceptive methods to exploit open access publishing for their own profit.
- Research published in predatory journals may compromise nursing and midwifery scholarship, while undermining the author's reputation and career prospects.
- Early career researchers and researchers from developing countries are particularly vulnerable to predatory publishers.

How should the findings be used to influence policy/practice/research/education?

- Guidelines are needed to help nursing and midwifery researchers recognize predatory journals and understand the negative consequences of publishing in them.
- Institutions and employers should emphasize publication quality over quantity for academic tenure and promotion.
- Clear guidelines are needed to help researchers navigate safely open access publishing.

followed, in 2003, by the Bethesda Statement on Open Access (2003) and the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities (2003). All three calls to action shared the common goal of making peer-reviewed research papers available online, free and without usage restrictions (Wolpert, 2013). The OA movement encourages the use of different, co-existing models: "Green", "Gold" and "Diamond" or "Platinum" OA (Quinn, 2015) (Table 1). Broadly, Green OA is a form of self-archiving, by which researchers deposit manuscripts in online repositories or on websites, before or after they have been published (Fuchs & Sandoval, 2013). Authors following the Green OA route do not pay fees and there is only limited, if any, quality control of the content. Although Green OA content may not have been peer reviewed before being made available online, OA repositories ("Green OA") generally host content that has been peer-reviewed elsewhere (Suber, 2015). Access to Green OA papers is often delayed by a publisher's embargo, to offer the benefit of early access to paying subscribers. Under Gold OA, authors pay an article processing charge (APC) for their paper to be immediately available, free of any subscription

TABLE 1 Models of OA publishing

| Approach Permits authors to upload pre-print version of paper to online repository (a form of self-archiving) Access Institutional repositories (e.g. university libraries) Non-profit academic publishing No payment by author or institution Permits immediate OA to paper OA journal OB journa | IADLL I Mode | as of OA publishing | | | |
|--|---------------|---|---|--|---|
| pre-print version of paper to online repository (a form of self-archiving) Access Institutional repositories (e.g. university libraries) Funding model Non-profit academic publishers are for-profit (e.g. BioMed No payment by author or institution institution Publishing are for-profit (e.g. BioMed No payment by author or institution Publishing are for-profit (e.g. BioMed Non-profit academic publishing are for-profit (e.g. BioMed No payment by author or institution Publishing and some are non-profit academic (e.g. Public Library of Science [PLoS]) Author pays APC to journal, or institution pays annual membership, for publishing paper Peer review Yes/No. Online repositories do not conduct peer review, but are dependent on the peer review process of Gold and Diamond OA journals Different versions of peer-reviewed papers may be posted online (e.g. pre-print, edited) Access Free online access to readers Example Social Science Research Network, PubMed Central Subscription OA: Journal of Scientific Publishing Non-profit academic publishers publishing paper Paper Profit academic publishers publishing paper APC to journal or institution pays annual membership, for publishing paper For-profit academic publishers publishing paper APC to journal or institution pays annual membership, for publishing paper Yes/No (Dependent on journal) Yes Yes Yes/No (Dependent on journal) Yes Yes Yes Yes online access to Free online access to Free online access to readers | Model | Green OA | Gold OA | " ' | Diamond or platinum OA |
| university libraries) Journals also offering choice of OA | Approach | pre-print version of paper to online repository (a form | | | |
| publishing No payment by author or institution No payment by author or institution Institution Publishing and some are non-profit academic (e.g. Publishing paper) Public Library of Science [PLoS]) Author pays APC to journal, or institution pays annual membership, for publishing paper Peer review Yes/No. Online repositories do not conduct peer review, but are dependent on the peer review process of Gold and Diamond OA journals Different versions of peer-reviewed papers may be posted online (e.g. pre-print, edited) Access Pree online access to readers Free online access to papers only to readers Example Social Science Research Network, PubMed Central Advanced Nursing Author or institution pays annual publishing paper APC to journal of Author or institution pays or similar. Some publisher or institution pays annual publisher or similar. Some p | Access | | journals also offering | OA journal | OA journal |
| do not conduct peer review, but are dependent on the peer review process of Gold and Diamond OA journals Different versions of peer-reviewed papers may be posted online (e.g. pre-print, edited) Access Free online access to papers only to readers Example Social Science Research Network, PubMed Central Advanced Nursing journal) Free online access to Free online access to Free online access to Free online access to readers Free online access to Free online access to Free online access to readers Triple C: Communication, Capitalism & Critique, | Funding model | publishing No payment by author or | are for-profit (e.g. BioMed Central [BMC], Emerald Publishing) and some are non-profit academic (e.g. Public Library of Science [PLoS]) Author pays APC to journal, or institution pays annual membership, for publishing | publishing Author or institution pays APC to journal for | publisher financed by a university, learned society or similar. Some publishers charge authors small APC to cover cost of |
| readers papers only to readers readers readers Example Social Science Research Subscription OA: Journal of Network, PubMed Central Advanced Nursing Is.com readers Triple C: Communication, Capitalism & Critique, | Peer review | do not conduct peer review, but are dependent on the peer review process of Gold and Diamond OA journals Different versions of peer- reviewed papers may be posted online (e.g. pre- | Yes | | Yes |
| Network, PubMed Central Advanced Nursing Is.com Capitalism & Critique, | Access | | | | |
| | Example | | Advanced Nursing | | Capitalism & Critique, |

OA, open access, APC, article processing charge.

charges. Although publication costs shift from readers (traditionally via subscriptions) to authors, these costs are usually covered by institutions or funding agencies (Fuchs & Sandoval, 2013). Gold OA includes peer review before publication, in line with each journal's protocols (Fecher & Wagner, 2016). Increasingly, subscription journals (e.g. the *Journal of Advanced Nursing*) offer Gold OA via APCs to cover the cost of publishing; however, they still retain the option for authors to publish their research free of charge via the traditional subscription paper route. Under Diamond or Platinum OA, academic institutions or funds cover the costs of editing and publication or hosting (Fecher & Wagner, 2016), but in some instances the publisher may charge authors to cover the costs of publication. Similar to Gold OA, peer review conducted by academics serves as quality control in Diamond or Platinum OA. Free access is available to all readers.

As OA scholarly publishing has gained widespread acceptance, increasing numbers of OA journals are being established and institutional repositories continually expanded (Kennison & Norberg, 2014).

Globally, universities have developed policies to incorporate OA into how they capture, manage and distribute research outputs and many now include OA as part of their mission and mandate (Fecher & Wagner, 2016; Wolpert, 2013). Similarly, research funding bodies increasingly specify a requirement for Gold OA to disseminate research findings (DeGroff, 2016). However, the rapid growth of OA publishing has been accompanied by the emergence of publishers with dubious business motives and peer review practices (Beall, 2016; Pearson, 2016; Shen & Björk, 2015). These predatory publishers exploit the author pays OA model for their own profit, rather than promoting and preserving knowledge (Akers, 2016; Crowe & Carlyle, 2015; Hansoti, Langdorf, & Murphy, 2016). Their offer of rapid publishing without rigorous peer review is taken up mainly by inexperienced researchers and those in developing countries, who need to build their publication record (Omobowale et al., 2014; Xia et al., 2015). Those who are desperate to have a paper accepted after several rejections are also vulnerable to the promise of publication by predatory publishers (Jones & McCullough, 2014; Shamseer et al., 2017).

The risks posed by predatory publishers to the Gold OA process raise serious concerns for the quality of nursing and midwifery publications, as nurses and midwives are expected to contribute to and practice in a way that reflects current evidence-based research (Clark & Thompson, 2012: Oermann et al., 2016). Poor quality papers published without appropriate peer review have the potential to compromise scholarship in these disciplines (Clark & Thompson, 2016; Oermann et al., 2016), while information that is not very accessible (such as papers published in predatory journals) may impede the advancement of scientific evidence (Shamseer et al., 2017; Stone & Rossiter, 2015). Even high quality papers lack intellectual credibility if they are published in journals of dubious quality and reputation (Omobowale et al., 2014). In addition, the potential reach of papers published in these journals is severely limited, as they are not typically indexed, making them difficult to find through standard database searches (Clemons et al., 2017; Hansoti et al., 2016; Van Nuland & Rogers, 2016). In this paper, we aim to review and discuss predatory OA publishing in the context of nursing and midwifery and develop a set of guidelines that serve as a framework to help researchers avoid predatory publishers.

3 | DATA SOURCES AND CRITERIA

A literature search was conducted of four major health-related databases: BioMed Central, the Cumulative Index to Nursing and Allied Health Literature (CINAHL), MEDLINE with Full Text and PubMed. Inclusion criteria were: publication in the period 2007-2017; English language; publication in books, journals or web pages; in the field of health and nursing. Exclusion criteria were: conference papers or presentations. Search terms, with Boolean operators (and/or/*). included combinations of the following keywords: "dubious", "midwi*", "nurs*", "open access", "peer review", "predator*", "publish*" and "scholarly misconduct". To illustrate, a MEDLINE search for "predator* publi*" yielded 946 publications, which was reduced to 28 when the search term "nurs*" was added and to only one when "midwi* was added. An Internet-based search of English-language government and agency reports and professional guidelines relating to the topic was also conducted. Reference lists of relevant papers were examined. Initially, abstracts were read to ascertain their relevance to predatory publishing in nursing and midwifery. ** undertook the initial screening and reading of the records.

4 | SEARCH OUTCOME

After excluding 918 publications, full text articles were assessed for the remaining papers. Papers were read and reread to elicit their relevance to predatory publishing in nursing and midwifery. Both authors (** and **) evaluated the remaining 28 papers independently. Any disagreements were resolved through discussion. A sample of literature summarizing key points and recommendations about predatory publishing is given in Table 2.

5 | DISCUSSION

There are many reputable OA journals with rigorous peer evaluation and editorial procedures. However, the Gold OA model is vulnerable to exploitation by an increasingly large number of predatory publishers seeking to profit from author fees (Haug, 2013; Vinny, Vishnu, & Lal, 2016). Predatory publishing has created extensive negative publicity for legitimate Gold OA journals generally (Shen & Björk, 2015), while undermining the individual reputations of authors and academic institutions (McLeod, Savage, & Simkin, 2016; Smith, 2015). Careers may be irreparably damaged by publishing work in journals with questionable quality standards (McQuarie, 2015). Even good research published in predatory journals may diminish scholars' reputations, if it becomes apparent that they did not identify a suspect journal (Nelson & Huffman, 2015), or chose to turn to a predatory journal to increase their publication numbers (McLeod et al., 2016). Tenure and/or promotion committees at "predatory aware" universities may raise doubts about the academic integrity of a faculty member who has been found to have published in a predatory journal (McLeod et al., 2016). In nursing and midwifery, predatory journals pose an additional risk: patient care may be compromised if clinicians unwittingly follow the suggestions put forward in papers that have not undergone rigorous peer review (Jones & McCullough, 2014). As the predatory publishing model is built on APCs paid by the author, the financial implications on the different components of academic publishing are also significant (Darbyshire et al., 2016).

Nursing and midwifery researchers frequently experience pressure to publish, while reputable journals report soaring submission and rejection rates (Jasper, Vaismoradi, Bondas, & Turunen, 2014). This environment has seen a rapid increase in the number of predatory publishers who are creative and deceptive in the ways they solicit journal submissions. It is frequent to receive emails inviting publication in a "highly prestigious" OA journal. These highly flattering emails are often written poorly, with spelling mistakes and grammatical errors and contain unrealistic promises of rapid review and acceptance for publication (Stone & Rossiter, 2015; Vinny et al., 2016). Further examples of deceptive practice include using journal titles or website designs that closely resemble authentic journals (Quinn, 2015) and manipulating or lying about impact factors. Impact factor reflects the average number of citations for each article published in a journal in the preceding 2 years. The retrospective nature of this measurement favours established journals and it can take up to 5 years for a journal to earn an impact factor (Baum, 2011). Given that few, if any, predatory journals meet the quality requirements for a legitimate impact factor, this measurement is often made up (Beall, 2016). To disguise the integrity and exclusivity of their journals, predatory publishers also inflate their rejection rates (McLeod et al., 2016). Higher rejection rates indicate higher prestige or credibility.

Another important consideration associated with predatory journals concerns the indexing and digital preservation of published papers. Many predatory publishers claim to be indexed in reputable bibliographic databases, such as Scopus, PubMed and CINAHL. As a

TABLE 2 Summary of key points and recommendations relating to predatory publishing

Key points/recommendations

Rise of predatory publishing

- · Form of unethical scholarly practice or research misconduct
- Publishers use solicitation techniques to invite researchers to submit papers and join editorial boards
- Journals lack acceptable peer review and editorial oversight
- Papers published in these journals are unlikely to be read or used, as many are not indexed or searchable
- Predatory publishing is more common in countries where academic evaluation practices favour international publication
- Authors are not always unwitting victims, but may take a calculated risk to publish in predatory journals, to publish in "international" journals

References

Akers, 2016; Beall, 2013, 2016; Clark & Thompson, 2012; Clemons et al., 2017; Darbyshire et al., 2016; Hansoti et al., 2016; Haug, 2013; Manca et al., 2017; Pearson, 2016; Pickler et al., 2015; Quinn, 2015; Shamseer et al., 2017; Shen & Björk, 2015; Stone & Rossiter, 2015

Risks of predatory publishing

- Has created a negative image of OA generally
- Use of poor quality research published in these journals is a threat to evidence-based practice and undermines scholarship
- Journals are not indexed in reputable databases, which limits the reach of even high quality papers, as regular search techniques do not identify their content

Beall, 2016; Clark & Thompson, 2016; Darbyshire et al., 2016; Jones & McCullough, 2014; Manca et al., 2017; Pickler et al., 2015; Shamseer et al., 2017; Smith, 2015; Stone & Rossiter, 2015; Vinny et al., 2016

Authors' responsibilities

- Understand how to recognize predatory journals, and the adverse consequences of publishing in them
- Perform due diligence when considering where to submit a paper:
- Be suspicious of claim of rapid peer review and publishing processes
- Check reputable online databases for journal indexing
- Check the journal's editor credentials and contact details
- Ensure that the peer review process is transparent

Institutions' responsibilities

- Develop policies and procedures to mitigate against predatory publishers, including emphasizing publication quality over quantity for academic tenure and promotion
- Design educational programs to increase awareness of predatory publishers and the risks they pose
- Provide guidance to protect the interests of their researchers and students
- Publicly identify reputable and predatory publishers and journals

Beall, 2013; Clark & Thompson, 2012, 2016; Clemons et al., 2017; Crowe & Carlyle, 2015; Dadkhah, 2016; Darbyshire et al., 2016; Hansoti et al., 2016; Jasper et al., 2014; Moher & Srivastava, 2015; Oermann et al., 2016; Pearson, 2016; Pickler et al., 2015; Shamseer et al., 2017; Stone & Rossiter, 2015; Van Nuland & Rogers, 2016

Crowe & Carlyle, 2015; Darbyshire et al., 2016; Jasper et al., 2014; Manca et al., 2017; Moher & Srivastava, 2015; Nick, 2012; Van Nuland & Rogers, 2016; Wolpert, 2013; Xia et al., 2015

result, papers published in these journals are unlikely to add to the global body of knowledge, as they cannot be located easily by future researchers and other readers through a standard literature search (Clemons et al., 2017; Van Nuland & Rogers, 2016). While many predatory journals indicate that they are "indexed" in it, Google Scholar is not an indexing database that searches pre-selected journals (Shamseer et al., 2017). By merely searching the Internet for any scholarly content, Google Scholar provides no indication of a paper's quality or integrity. As predatory publishers are often in business for only a short period of time, articles may disappear from their websites altogether (Oermann et al., 2016).

Other risks to the integrity of the online publishing process include hijacking of journals, domains, papers and authors (Dadkhah, 2016). Hijacked journals are counterfeit websites created to look like authentic journals, which trick authors into believing that they are submitting papers to a legitimate online publisher (Haug, 2013). Authors' papers are published at a fee, but without peer review. Another hijacking method involves forgers using similar URLs to

authentic journals, or registering expired domain names that previously belonged to journals (Dadkhah, 2016). Once again, unsuspecting authors risk damage to their reputation and financial cost for publication.

It is important for nursing and midwifery researchers to understand how predatory publishers operate and to ensure that their work is published in high quality journals (Crowe & Carlyle, 2015; Oermann et al., 2016). The strategies and prompts suggested in this paper summarize important considerations that should be accounted for when preparing a paper for publication (Figure 1). Wherever possible, nursing and midwifery researchers should aim to publish their work in reputable and, as appropriate, highly ranked journals. As a starting point, the integrity of any OA journal should be checked in the Directory of Open Access Journals (DOAJ) (https://doaj.org), while the publisher should be a member of the Open Access Scholarly Publishers Association (OASPA) (http://oaspa.org). Both of these demand honest, high-quality publishing standards and exclude publishers who do not comply with their principles and codes of ethics

Decision to submit paper for publication Prior to writing the paper, identify a suitable journal for submission Search for a reputable journal Respond to direct invitation by unknown Beware of badly written sender (e.g., solicitous email) spam emails that use flattery to attract your attention Check if the proposed journal or publisher is listed in appropriate directories, or affiliated with a nursing/midwifery professional organisation or university (e.g., DOAJ, INANE, OASPA) Are you confident about the journal or publisher's reputation? YES NO Verify JCR impact factor and Chech JCR and SJR or SNIP/CiteScore ranking SJR or SNIP/CiteScore ranking Review scope, publication history, editorial board Look out for: and contact details Journal name that is similar to other established journals Short publication history Are the peer review and publication processes clear? No impact factor or ranking Lack of focus on subject matter No editor or contact information listed NO YES Peer review process unclear Additional checks: Promise of fast review and publication Information about research Difficult to identify copyright and licensing information being conducted in an ethical manner (e.g., Declaration of Helsinki). statements about conflict of interest, funding, author Are fees, including article processing charges, presented clearly? contributions NO YES Difficult to determine fee structure Terms and conditions should be No scope to negotiate fee waiver or reduction transparent and negotiable Terms or fees change after acceptance Has your due diligence check helped you confirm the appropriate journal for your paper?

Talk to a supervisor or colleague

Start a new search for an appropriate journal

FIGURE 1 Guidelines for authors to avoid predatory publishers

YES Prepare your paper for

submission

(Suber, 2017). For nursing and midwifery researchers, the International Academy of Nursing Editors (INANE) lists legitimate journals in its Directory of Nursing Journals (https://nursingeditors.com/journals-directory/).

Beall (2016) identifies Thompson-Reuters' Journal Citation Reports (JCR) as the most reliable way to verify impact factor, while portals such as SCImago Journal & Country Rank (SJR) (http://www. scimagojr.com/index.php) or Scopus's Source Normalized Impact per Paper (SNIP) and CiteScore (https://www.scopus.com/) provide comprehensive metrics of peer-reviewed literature. If a journal is not listed in INANE and cannot be located in SJR, the risk exists that it is a predatory journal. Other online resources include the Think-Check-Submit website (http://thinkchecksubmit.org/), which provides a general checklist to help researchers identify trusted journals and assess a publisher's credentials, while the Stop Predatory Journals website (https://predatoryjournals.com/about/) includes a list of hijacked journals, predatory journals and publishers. However, it should be noted that legitimate new journals may not yet appear in these directories or in SJR, SNIP or CiteScore. In these cases, additional checks should be conducted to determine the journal's legitimacy, starting with a visit to the journal's website.

Branding that is similar to an established journal (including a similar name and design) and poorly written webpages that contain grammatical, typographical and spelling errors are warning signs of predatory journals. A lack of focus on the subject matter and editorial or contact information that is missing or difficult to find should also be treated as red flags. Indicators of a journal's legitimacy may include verifiable evidence of an affiliation with a professional organization or university and statements confirming the ethical conduct of the research. Similarly, statements regarding conflict of interest, funding and author contributions should be reviewed. The peer review process and publishing fees should be explained clearly. Promises of rapid peer review and guaranteed publication should be treated with scepticism: quality peer review takes time and publication of a paper that has not yet been reviewed should not be guaranteed. Regarding fees, authors are generally not required to pay a fee for publication in subscription journals unless, of course, if they opt to publish via the OA route in these journals. However, Gold OA journals may charge an APC. Legitimate OA journals usually provide some scope for this fee to be negotiated or waived. Conditions that change between submission and acceptance of publication—for example, regarding payment or copyright -should also prompt a review of the journal's integrity. For early career researchers (including students undertaking research theses) and researchers from developing countries, discussion with a supervisor or experienced author-colleague may also help to avoid predatory publishers.

6 ☐ IMPLICATIONS FOR NURSING

There are several implications for exercising due diligence to ensure the highest standard of scholarship, relating to individual nursing and midwifery clinicians, educators and researchers and institutions. From the perspective of nursing and midwifery clinicians, educators and researchers, it is important to understand how to recognize predatory journals and the adverse consequences of publishing in them for evidence-based practice, personal reputation and career prospects. Clear guidelines, such as those suggested in this paper, should be followed by nursing and midwifery researchers seeking to publish their work in open access journals. At least, online databases should be used to verify the legitimacy and ranking of a journal.

From the perspective of institutions—often universities—policies and procedures should be implemented that protect the interests of researchers and students and mitigate against the risk of predatory publishers. Committees and departments should develop education programs to increase awareness of the increasing risk of predatory publishers and the adverse consequences of publishing in them. More broadly, institutions should publicly identify reputable and predatory publishers and journals, as they seek to eliminate the threat they pose to the careers of nursing and midwifery students and scholars. A shift is also required in institutions that emphasize (or are perceived as favouring) publication quantity over quality for academic tenure and promotion, as increased pressure to publish and rising submission and rejection rates of legitimate journals, may lead nursing and midwifery scholars to risk publication in predatory journals.

Finally, stringent individual and institutional review procedures are particularly important in health-related research, in this case, nursing and midwifery research, because of the potentially serious adverse consequences for patient care that might arise from adoption of published research findings that have not underwent rigorous peer review. The likelihood of this type of situation arising is heightened by the fact that most busy clinical nurses and midwives are illequipped to ascertain if a journal is a predatory or non-predatory open access journal.

7 | CONCLUSION

Gold OA is a valuable and rapidly growing method of publishing research for nursing and midwifery researchers, but it is important not to be tempted by "false" gold. Researchers should exercise due diligence to ensure that their work is published in respected journals. Guidelines can assist researchers to navigate the OA publishing field, to contribute globally to nursing and midwifery knowledge and practice.

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CONFLICT OF INTEREST

No conflict of interest has been declared by the authors.

AUTHOR CONTRIBUTIONS

All authors have agreed on the final version and meet at least one of the following criteria [recommended by the ICMJE (http://www.icmje.org/recommendations/)]:

- substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data;
- drafting the article or revising it critically for important intellectual content

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