Ready! Aim! Fire! targeting the right medical science journal

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Objective **Inadvertently submitting a paper to a journal that is unlikely to publish it is a waste of resources and ultimately delays dissemination of one's research. A high proportion of manuscripts are rejected by their author's first-choice journal. The aim of the present work was to review guidance provided within the literature for journal selection that might minimize the chance of manuscript rejection. We also consider papers that encompass more than one main medical science and describe the selection process that we used with a paper that was published in *Cardiovascular Endocrinology*.**

Methods **A database search (Embase, PubMed and Medworm) was performed for all articles published in the scientific literature providing guidance on journal selection. Articles were identified that either had journal selection as their principal topic or included journal selection as part of a broader discussion of publishing. The relative performance of four free-to-use, web-based applications that claim to provide guidance on journal selection was compared.**

Results **The searches identified 286 hits, of which 249 were in English. Of these papers, 16 discussed journal selection and a further 10 articles were identified from citations within the original 16 articles. Only one article described a comprehensive model for submission decision-making. Identification of appropriate candidate journals by various web-based applications was erratic, with the Jane database providing the most robust suggestions.**

Conclusion **Our work suggests that little attention has been focused in the scientific literature on the mechanisms that authors use to select a journal for their work. Nevertheless, scientists for the most part seem to have a good sense of where their papers are most likely to be accepted. Beyond ensuring that a manuscript fulfils all the target journal's requirements, the literature suggests that it is important to have an objective view of the scientific contribution or 'value' of your work. *Cardiovasc Endocrinol* 6:95–100 Copyright © 2017 The Author(s). Published by Wolters Kluwer Health, Inc.**

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Introduction

Of the more than three million manuscripts submitted to journals each year, almost half are rejected [1] and this represents an enormous expenditure of time and resources. The scientific literature has given some consideration to the deficiencies in manuscripts that lead to their rejection by medical journals [2–4]. Numerous editorials and subjective accounts have detailed the flaws that are frequently encountered by editorial offices [5–7]. Some reports have even provided quantitative assessments of the frequency of errors and their impact on the publishing fate of manuscripts – although these tend to be limited to data derived from single journals [8–10]. The available data suggest that 30–50% of articles in top medical journals fail to make it past the initial screen. Although there may be any combination of 'reasons' why a manuscript is rejected without peer review, the feedback provided to the authors on immediate rejection is generally neutral, noncommittal and uninformative [7]. Communications normally suggest that the work would be low priority because it does not fall within the aims and scope of the journal and/or is of limited interest to the readership [7]. The implication is that the authors have chosen the wrong journal for their paper. The question arises as to how authors can ensure that their article has the best chance of avoiding these criticisms.

Identifying the most appropriate vehicle in which to publish research findings is a perennial challenge. Choosing the wrong journal can result in publication being delayed and the subsequent need to commit considerable resources to preparing alternative journal submissions [11,12]. Although a high proportion of manuscripts are rejected by their first-choice journal, they are often eventually published in alterntive journals, suggesting that initial rejections are not a consequence of fundamental errors in the underlying quality or relevance of the science that is being reported [11,12].

Choosing the journal in which to publish has become increasingly more complex following the many changes to the publishing landscape. Open access, online-only and pay-to-view choices must be considered alongside

the more traditional considerations: impact factor, publication lead-time and the target journal's ambition to be identified as an elite publication. The proliferation of new journals and novel areas of specialization coupled with the emergence of interdisciplinary topics have only served to further confound the selection process. The remedy for this seems to be simple: adopt a rational approach as to how to identify the journal that best fits the research paper under consideration. The question that we pose here is as follows: what guidance might be found within the literature or elsewhere on how to achieve this?

Methods

Systematic review

A database search of all reports published in the scientific literature providing guidance on journal selection was performed. Searches were performed using three online systems: Embase, PubMed and Medworm.

The search was performed for the period 1 January 2000 to December 2015, inclusive. The search terms used were: ('publishing'[MeSH Terms] AND 'periodicals as topic'[MeSH Terms]) AND ('selection'[All Fields] OR 'choosing'[All Fields] OR 'choice'[all fields]).

A record was made of all articles published in English that were identified by the search. A process of electronic acquisition was initiated to source the manuscripts. Articles were selected that either had journal selection as their principal topic or included journal selection as part of a broader discussion of publishing.

To supplement the electronic search, a manual review of reference sections provided in each of the articles sourced was performed to identify any additional material that could be added to the final data set.

Web-based journal targeting applications review

We tested four free-to-use, web-based applications that claim to provide guidance on journal selection. These were JournalGuide (*http://www.journalguide.com*), Edanz (*http://www.edanzediting.com/journal-selector*), Journal/Author Name Estimator (Jane: *http://www.biosemantics.org/jane/*) and Elsevier's online journal identification tool.

Searches were performed to find out which journals would be suggested for review articles and primary manuscripts that had been published previously by the authors of the present work between 2000 and 2016 (Table 1). Individual manuscripts were selected from one of four different disciplines: respiratory, diabetes, cardiovascular disease and clinical pharmacology. The original journals in which these manuscripts were published were from different publishers and have Impact Factor scores of between 0.8 and 3 as well as one journal not yet listed in Journal Citation Reports. Where possible, separate searches were performed independently using the titles, keywords and an abbreviated abstract taken from each

Table 1 Profile of the journals in which the test manuscripts were originally published

	Primary manuscript				Review article			
Discipline	Journal	Impact Factor	Year of publication	Publisher	Journal	Impact Factor	Year of publication	Publisher
Respiratory	*Thorax*	2.73	2016	BMJ Publishing Group	*Postgraduate Medical Journal*	0.93	2014	BMJ Publishing Group
Diabetes	*Trials*	1.00	2014	BioMed Central	*Diabetes Therapy*	Not listed	2011	Springer Healthcare
Clinical pharmacology	*The Journal of Clinical Pharmacology*	0.97	2002	Wolters Kluwer Health/Lippincott Williams & Wilkins	NA	NA	NA	NA
Cardiovascular disease	*American Journal of Hypertension*	1.29	2002	Oxford University Press[a]	*Current Opinion in Cardiology*	0.89	2013	Wolters Kluwer Health/Lippincott Williams & Wilkins

NA, not applicable.
[a]Journal was published by Elsevier at the time the manuscript was written in 2002.

of the articles. The outputs from the searches were recorded.

Results

Systematic review

The results of the searches when combined involved 286 hits, of which 249 were in English. Of these papers, 16 discussed journal selection [13–28]. A further 10 articles were identified from citations within the original 16 articles [29–38].

Thirteen articles concerned themselves only with journal selection and included advice for authors in general [13–16,20,22,26,28,32,34–36,38]. A further seven remarked on journal selection as part of a wider discussion of publishing [17–19,21,24,31,33]. Three articles were intended to be of interest to only specific audiences: psychiatrists [25], the authors of systematic reviews [27] or anaesthetists [37].

The two remaining articles involved surveys; one evaluated the methods that authors use to select journals for their manuscripts [29] and one surveyed editors to determine the criteria that they use to select manuscripts [23]. Only one article described a comprehensive model for submission decision-making that incorporated direct and indirect influencers [30].

Web-based journal targeting applications review

Outputs from the four different online search tools varied considerably in the number and diversity of suggestions, making it difficult to perform anything more than a qualitative comparison of their performance. In all cases, the JournalGuide database failed to suggest the journal that had originally published the test articles when searching was performed using only the primary manuscript keywords. When the search was repeated using the manuscript title, JournalGuide identified the original journal (*Thorax*) as the second highest scoring target for the respiratory article; no other journals for the other subject areas were identified correctly. When an abbreviated abstract was used, JournalGuide identified the respiratory (third option), clinical pharmacology (ranked sixth) and diabetes (ranked second) journals, but not the cardiovascular disease manuscript's journal (*American Journal of Hypertension*). For review articles, JournalGuide identified the original journal of publication for the respiratory therapy review article when the search was performed using the original manuscript's title (third rank) and abbreviated abstract (ranked 12th), but not when keywords were used.

The Elsevier database only holds data on their own publications and therefore none of the original journals for the test publications were identified on searching. The *American Journal of Hypertension* article had been published by Elsevier in 2002 (now Oxford University Press), but was not identified. In terms of the search results, the alternate suggestions provided were considered suitable options, but the Impact Factor scores for the alternate targets were generally higher than the impact factors of the actual publishing journals.

For the primary manuscripts, the Edanz database identified the actual publishing journal for only the diabetes manuscript (ninth of 15 options) when a combination of the article title and keywords were submitted as the search terms. When an abbreviated abstract was used, the original article was found for the respiratory (third of seven) and diabetes (sixth of 15) manuscripts. For the review articles, the only match found was that for the diabetes manuscript when (and only when) a title and keyword combination was submitted.

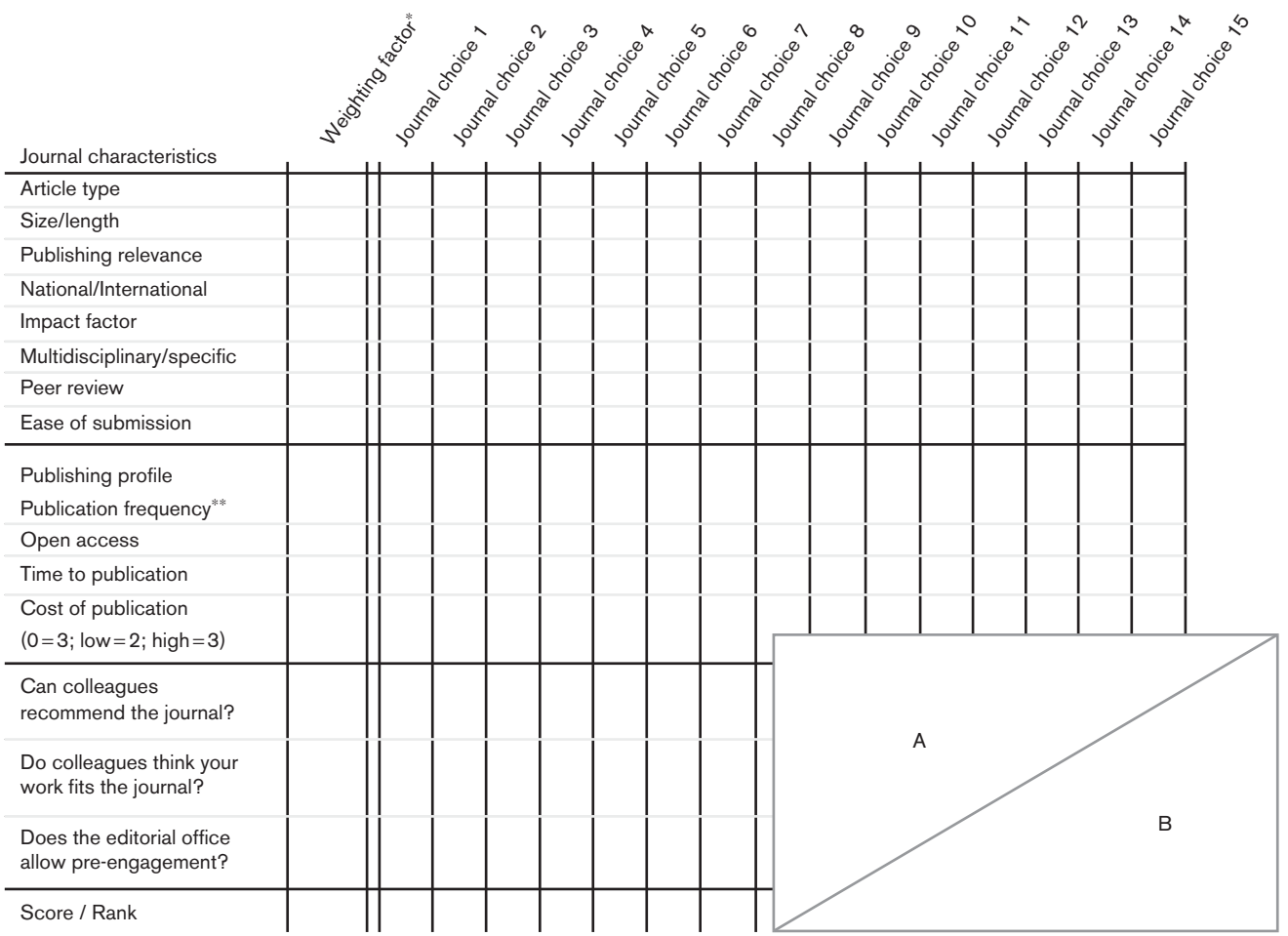
The Jane database identified the original journal of publication as its first choice for the respiratory and diabetes primary manuscripts irrespective of the search strategy: title, keyword or abstract. In contrast, it only identified the clinical pharmacology journal when the abstract was used (seventh option). Jane only identified the cardiovascular manuscripts journal when the keywords (first option) and abbreviated abstract (39th option) were used. For review articles, Jane identified the original journals for all test manuscripts (first choice in all cases) when abstracts were searched. When titles were used, it identified the respiratory manuscripts journal (third option) and the cardiovascular (sixth option) journals, whereas it only identified the cardiovascular journal (12th option) when the searches were performed using keywords.

Discussion

The literature contains a significant amount of work summarizing common reasons why manuscripts are rejected by medical journals. Inappropriate journal choice is a major reason for rejection. Unfortunately, there seems to be little guidance on how to minimize the risk of rejection by better targeting your submissions. Manuscripts that have specifically attempted to cover this issue tend to have adopted one of two approaches: either reviewing the current publishing landscape or reporting on their attempts to capture metrics that can be used to provide a better grasp of what is happening. Irrespective of the approach, much of the guidance that can be distilled from their work tends to fall within the realms of common sense [20,34,39]. Perhaps the best advice that we identified was for authors to have a senior colleague provide an opinion on whether they can recommend the journal and/or believe that the work is likely to be accepted by their first-choice journal.

No research is ever completed in isolation. As Sir Isaac Newton famously remarked, our work is only achieved through the addition to the existing body of knowledge – 'standing on the shoulders of giants'. As such, it is generally assumed that authors are aware of which scientific

Fig. 1



Example of a journal scoring grid. Each cell is used for dual entry, where A is the journal's score and B is the score after weighting adjustment. B values are summed for each column to yield a total score. A simple '1' or '0' can be entered for 'yes' and 'no' answers or more complex systems can be devised. *Weighting factors can easily be established by assigning a score of 15 to 1 by order of importance or a more complex and factor biased system can be used. **Publication frequency is number of issues per year.

journals most frequently publish their 'type' of research. This being so, it should be possible for researchers to assemble a list of appropriate options. Such a list might be expanded upon with suggestions from peers, checking online journal listings and cross-referencing journal information provided by relevant professional associations. From this position, the choice of journal is better informed by gathering information on the various attributes of each candidate journal. With all this information at hand, making an *ad hoc* selection may inadvertently confound preconceived publishing goals. We have found that the construction of a scoring grid enables authors to rate journals on how they best fit their needs and can provide an objective means of identifying the journal that most likely meets the requirements (Fig. 1). Using such an approach, the various influencing factors have been grouped previously into four categories: infrastructure, readership, prestige and performance [25]. When constructing an assessment grid, it is possible to rank the relative importance of specific selection criteria by weighting them so that greatest emphasis is placed on those factors that best represent or reflect your publishing goals. For example, it may be important to an investigator (or team of investigators) to select a journal with a high impact factor, rapid turnaround time or a specific target audience. In Table 2, we provided a summary of possible considerations cited in the literature that may be incorporated into such a weighting system. Selection of two or three 'best' candidates from the analysis means that authors can quickly respond to rejection from the initial target journal by submitting to one of the alternatives.

Web-based application can serve as a useful resource when planning your publication. They provide a broad selection of alternate submission options. In our experience, the appropriateness of these suggestions appears to increase with the amount of data provided. Web-based

Table 2 Summary of advice for authors on journal targeting provided in the literature

Publishing relevance	Has the journal published similar articles in the last 5 years? If yes, then this might be the right journal for you. However, if a similar article has been published in the last 6 months, a journal may not consider a related article.
Article types	Does the journal publish the type of articles you are planning to submit? For example, does the journal publish review articles, methodology papers, clinical trials, case studies etc.
Journal restrictions	Can you deliver your project within the journal's requirements: length, number of figures, etc. Information on editorial policies and practices should be sought to anticipate situations which could arise during the submission and/or peer review.
Time and cost of publication	Rapid publication may be an important issue if there is the possibility that other groups may trump your findings Cost of publication can differ significantly from journal to journal and may be an important consideration for those with limited budget
Journal reach	Do authors, editors and the editorial board have a truly international distribution? Who reads the journal?[a] If researchers in other fields are likely to be interested in your study, then a multidisciplinary journal or one that covers a broad range of topics may provide exposure to the largest number of readers Articles that are only going to stimulate interest in researchers in the field would be better placed in a field-specific journal, where it will inform the greatest number of readers and consequently have the greatest impact
Journal prestige and longevity	A journal's Impact Factor is a major consideration for authors. Top-tier journals have high rejection rates (>90%), making this something that authors need to take into account. Quantitative measures of prestige, such as the Impact Factor, SCImago Journal Rank and H-Index, are available on journal websites and can be used to rank journals. Prestige equates to longevity. The publishing arena is an ever-changing field, with new journals always popping up and established journals going out of print. You may want to consider how likely it is that the journal will still be around in 5 years, although with the dawn of the electronic era, that may not retain its importance.

[a]Most authors are aware of the Impact Factor, but what is the Eigenfactor? It is an estimate of how many people read a journal and consider the contents to be important and is calculated indirectly by counting the total number of citations that a journal receives over 5 years [47].

applications are certainly a useful source of information about the target journals – although care must be taken as we did note discrepancies in some of the information that they provide; they may not report the most up-to-date information. The candidates provided by these tools should not be mistaken for definitive answers in terms of where authors should publish their manuscripts. Although many of the journal titles suggested were considered appropriate vehicles by the original authors of the test articles (data not shown), many had Impact Factor scores markedly higher than the journals which actually published the test articles (possibly reflecting their rejection/acceptance history) and there were a considerable number of inappropriate suggestions. Although these tools allow you to filter your search by varying degrees, they are not yet capable of aligning their findings with your publishing goals and although it may seem flattering for an author to be informed that a leading general medical journal such as the *New England Journal of Medicine* 'might' consider publishing an article, there are many unconsidered reasons as to why the journal might not. In addition, the search algorithms and data sources used by the various tools which determine their outcomes are not immediately obvious to the user and may bias the final decision. One clear benefit which can be derived from these tools in a publishing environment that is constantly changing is that they can inform authors of potential alternative targets such as multidisciplinary journals which they may not otherwise have known about nor considered. This reflects the authors' own experience when seeking a journal to publish collaborative research into the cardiometabolic effects bariatric surgery in elderly patients [40]. Speed of publication was one of our top priorities, whereas journal prestige, that is Impact Factor, was not. We identified 20 potential candidates using the Edanz Journal Selector online application and, after collecting information on each of our candidate journals, we applied a weighting system (Fig. 1) to identify the top five best fitting our publishing goals. We sent emails to the editorial offices of all five journals and we quickly received a response from *Cardiovascular Endocrinology*: their responsive and friendly editorial office decided the final home of our manuscript. It was our opinion that a journal's broader scope translates into the editorial office having an open mind on what it is prepared to consider for publication. Authors should see this as a strategic advantage when considering in which journal to publish their work, particularly in a marketplace where inappropriate journal choice is a major reason that editors provide for rejection; the broader scope journals have to be a major target.

The present work has highlighted how multiple factors should influence the choice of journal. However, it is clear that there remains the widespread perception that the value of your research is dictated by a single metric: the journal's Impact Factor [29]. Many authors are prepared to take a calculated risk and, for the first journal to which they submit, aim for one with a high Impact Factor in the hope of publishing somewhere prestigious; afterwards, they moderate their ambitions to avoid another rejection. The consequences of such a narrow view of research assessment have been discussed many times [41,42]. There is intense competition and limited space for publication in high Impact Factor journals, frequently resulting in multiple rounds of review and revision, and when a manuscript is rejected, the entire cycle is repeated with an alternate journal. The resultant delays in the communication of new findings hinder scientific progress, delay career progression for young scientists and waste limited resources. It has been eruditely argued within the literature that the focus on publication in a high Impact Factor journal as 'the prize' distracts attention from other important responsibilities of researchers – such as teaching, mentoring and the review of manuscripts for journals [43–45]. Reassuringly, the majority of

authors in the field of biology, if not medicine, appear to adopt a pragmatic view of journal selection. Of more than 80 000 papers published in 923 biology journals from 2006 to 2008, 75% were published in the first journal to which they were submitted, according to a 2012 study [46]. Authors might be able to reduce delay by writing to their target journal's editor asking whether they would be interested in reviewing the manuscript. Provide a brief description of the work and the rationale for selecting their journal. Although it is unethical to submit your manuscript simultaneously to more than one journal, there seems to be no such concern over making pre-submission inquiries to several journals at the same time.

In conclusion, our work suggests that although there has been intense interest in the publishing environment in recent years, little attention has been focused in the scientific literature on the mechanisms which authors use to select a journal for their work. Nevertheless, scientists for the most part seem to have a good sense of where their papers are most likely to be accepted. Beyond making a manuscript as ready for publication as possible and ensuring that it fulfils all the requirements detailed in the target journal's Advice to/Instructions for Authors, the best advice that we believe can be derived from our research into this topic is to have an objective view of the scientific contribution or 'value' of the paper to be published.

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Conflicts of interest

There are no conflicts of interest.

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