

Authorship: How to decide the order of authors on the byline?

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Abstract

Objective

The International Committee of Medical Journal Editors (ICMJE) authorship criteria have strengthened the integrity and accountability associated with named authors. The objective of this analysis was to review recognised guidelines and literature on how the order of the authors on the byline should be determined.

Research design and methods

Review of recommendations on author order from 17 manuscripts, the ICMJE criteria, and three top tier journals in clinical medicine was undertaken.

Results

Historical connotations associated with author position on the byline include first, second and last typically having more 'weight' regarding contribution, funding, and position of authority within the organisation or research area. The "publish or perish" phenomenon is a huge burden on all academics: links often forged with such experts means this also impacts pharmaceutical industry publications. There is no clear guidance on the number or order of authors. Contributorship criteria have been adopted by several journals to eliminate guest, ghost and honorary authorship. Guarantorship is typically defined, but not the corresponding author or the order of the authors. Listing authors alphabetically and quantifying contributions have been suggested but neither has proved popular in clinical medicine.

Conclusions

There remains a lack of guidance on the order in which authors appear on the byline, an increasing concern since global collaborations, and thus the number of authors, are growing. We would therefore recommend formal guidance on the order of authors, to weight by contribution for example, which may then be endorsed by all scientific journals.

Introduction

- The International Committee of Medical Journal Editors (ICMJE) authorship criteria [1] are often directly quoted, cited, or paraphrased by medical journals and other relevant guidelines.
- There is, however, very little guidance on the order in which the authors should appear on the byline.
- Author position has connotations and currency: current status and responsibility, pecuniary prospects, future collaborations, as well as intellectual and professional advancement.[2,3]
- The number of authors appearing on the byline is increasing and single-author papers are on the decline: 66.2% of papers indexed in the Web of Science had more than one author in 1981 compared with 89% in 2011.[4]
- The manuscript by Khachatryan et al broke a record in 2010 with 2080 authors ('hyper-authorship').[5,6,7]
- Historically, being first author implied the greatest contribution to the research: this person will have been involved in all aspects of the work presented. The second author will have contributed slightly less than the first but still significantly more than the others. The last position is typically held by a senior member of the team, a supervisor or sponsor representative for example, who may have also been responsible for obtaining or providing the funding for the work, but may not have contributed directly as much as the others named. Middle author positions were held by those who had made a significant contribution to specific sections, e.g. Statisticians.[2]
- Does this still hold true today? Are the ICMJE contributorship and guarantorship criteria being adopted by biomedical journals and do they make a difference on the order in which the authors are listed?

Methods

- In total, 17 papers (1994-2012) reporting trends and suggestions for author order were reviewed.[2-4, 6-20]
- In addition, data were obtained by performing a journal search on a defined therapeutic area (pain). Out of 71 biomedical pain journals identified, 20 were randomly selected. Six top-tier general medical journals were also evaluated. Each journal was assessed for contributorship, authorship and guarantorship criteria.
- To determine whether there was a pattern between the order of authors and published contribution for each of the speciality and top-tier journals, 5 manuscripts published from 2010 to the present were randomly selected, each with at least 5 authors listed on the byline.

Results

Guidelines

- The Committee on Publication Ethics (COPE) [20] and Good Publication Practice (GPP2) [21] guidelines state that the order of authors should be their joint decision.
- There is no mention of author order by the ICMJE.

Review articles/commentaries [2-4,6-20]

- Of those journals which referenced or paraphrased the ICMJE criteria, many did not refer to the most up-to-date recommendations or were incorrect in their citation.
- In the manuscripts of journals citing the ICMJE authorship criteria, there are variations as to their fulfilment according to author position: first authors typically fulfil all the criteria, but the second author less so than the first, the middle authors less than the others, and the last author typically contributes resources rather than participating in data collection.
- Author order may vary by country and by scientific field.
- Ghost, guest, and gift authorship is still present.
- To encourage consistency across biomedical journals, suggestions include authors being listed in descending order of contribution, adopting a quantitative/ranked assessment of contribution, alphabetically (seen less and less) or in random order. One such paper even suggested publishing papers anonymously.
- However, there is no consistency, even if contributorship is published as part of the scholarly article and a guarantor is identified.

Evaluation of 26 journals and 130 manuscripts

- Authorship criteria were stated by all 6 of the top-tier general biomedical journal and 15/20 of the pain journals (Fig. 1).

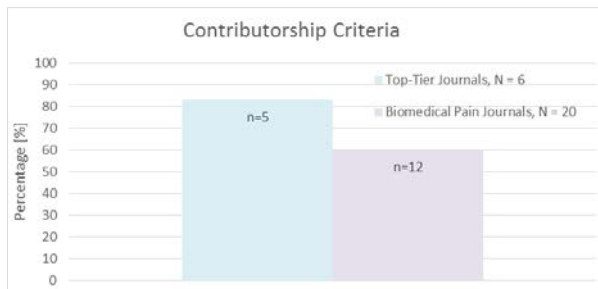
Results continued

Fig 1. The % of journals which state authorship criteria



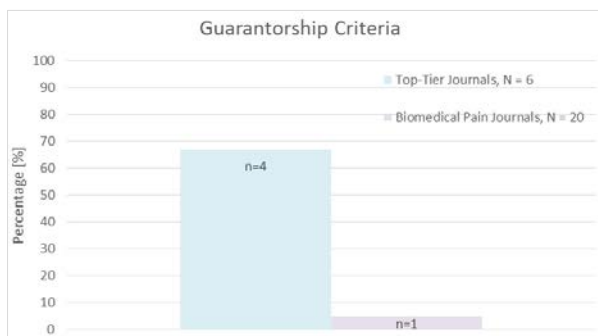
- In their instructions to authors, 18/26 journals evaluated requested contributorship information (Fig. 2), however, citing the ICMJE did not automatically imply making author contribution public:
- The majority of these journals (12/18) did not publish details of author contribution.
- 5 out of the 6 journals which published author contribution were among the top-tier general journals. The top-tier journal which did not publish contribution required the corresponding author to be accountable for the others on the byline.

Fig 2. The % of journals requesting contributorship information



- Guarantors, or persons identified as responsible for the integrity of parts or all of the work presented were required by 4/6 top-tier and only 1 out of the 20 biomedical pain journals (Fig. 3).

Fig 3. The % of journals requesting guarantor(s) for work presented



- Further analysis of top-tier journals showed no consistency in any of the following points when considering either publications within one journal or across the six chosen:
 - the level of contribution and the corresponding author position
 - position on byline and author position at company or institution, e.g. Professor, GP, Statistician, etc.
 - author position and guarantors, or those identified as responsible for the integrity of the data presented
 - the author position and the person who either obtained funding, wrote the manuscript or analysed the data for important intellectual content

Conclusions

- Although there are a number of limitations to the research presented here, it is evident that top-tier journals, those general biomedical journals with international renown and high impact factors, are much more stringent regarding authorship, contributorship and guarantorship criteria. The specialised journals, with lower impact factors, specific to a particular audience or area of illness appear to be less so.
- However, even those top-tier journals which have adopted these criteria, show no marked/observable trend in how the order of authors are presented on the byline. Therefore, the 'historical' connotations associated with author order, as mentioned in the Introduction, do not hold true for top-tier journals.
- It is our opinion that further discussion is needed at an appropriate forum, such as a future workshop at an ISMPP annual meeting, to provide guidance to authors on how to decide their order on the byline. Recommendations may be offered on how journals, irrespective of impact factor and specialisation, might present contributorship in a way that is consistent and may be related back to author position in a meaningful and practical way. This may be especially relevant as the pressure to publish is increasing, as are the number of global collaborations, the number of collaborators and, consequently, the number of authors.

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