The meaning of "author" in scientific publications

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Abstract

Medical progress has always been directly related to scientific publications. Publication is the end point of research which permits universal dissemination of research findings and conclusions. If research, "... is not published, it does not exist." Although this might seem like a truism, the current criteria for what constitutes authorship has been built gradually through debate. Complete uniformity in this respect has not yet been reached, and not all editorial boards of scientific journals have explicit concepts on this subject. A committee consisting of the editors of prestigious medical journals has proposed conditions to be met by people who appear as authors of scientific publications and have proposed an order in which authors should appear. Similarly, they have proposed that for multicenter studies which involve a large number of contributors, the real authors should be made clear and should be clear in the order that authors are listed as well in the final document. It should be stated without any ingenuousness that practices may exist that corrupt the process of authorship or make it fraudulent and which therefore threaten the credibility of research.

Keywords

Author credibility, accountability, fraud.

INTRODUCTION

Being an author of a scientific publication requires active participation and intellectually significant contributions. Research in the past was different from research in the present. There are differences in research methodology, the number of publications that come to light, the scientific debate itself, and also in the concept and consequences of authorship of these publications. (1) Today, publications have different impacts on researchers. For many, publications are an indicator of academic activity, (2) prestige, recognition and - very often – income. (3) These impacts are likely to have had an effect in creating the ever growing number of scientific publications, echoing the maxim "publish or perish". (4) This presupposes that research is done with rigor, honesty and the high ethical standards of scientific quality which ultimately translate into the real objective of research which is the progress of science and the advancement of knowledge that will benefit patients and contribute to the overall progress of humanity. The desire to publish in a hurry not only generates increased numbers of publications, (5, 6) but also increased numbers of authors in every publication. (7) While it is true that every day research becomes more and more complex, the large number of co-authors of articles dilutes the responsibility of each author. (8). For many it is very tempting to be included in a study even if their participation was minimal, or if they did not actively participate. Authorship has clear ethical implications and liability that positively or negatively affect the overall credibility of the study. (9) Consequently, concern has been growing about the need to develop a set of universal rules that establish, in a manner that is as objective as possible, criteria that professionals must follow to be considered an author of a study. This is the main objective of this review.

RIGHTS AND RESPONSIBILITIES OF AUTHORS

When a professional signs a study as an author, she or he contracts duties to the scientific community and the publishers of the publications. The first commitments are to fulfill obligations of authorship such as ensuring scientific quality and transparency of the study's ethics and to commit to displaying data that truthfully corresponds to the findings. (10, 11) Similarly, the author must make public conflicts of interest that might influence or bias the results. (12) Within the team it is also the responsibility of the authors to define the total number of authors and the order in which they will appear in the final manuscript. Authors should inform the editors of scientific journals of the existence of similar items, agree to reasonable changes proposed by editors, answer editors' questions and provide them with data requested. (10, 13) Authors must adhere to the standards established by the magazine they wish to publish in. It is important that authors adequately consider the relevant scientific literature prior to writing a study and that they corroborate the correct use of the literature cited in the manuscript for publication. The obligations of the authors do not end with the publication of the article. Authors must confirm that there are no errors in the published version, and, if there are any errors, they must publish an error notice to make readers aware of them.

Magazine editors should guarantee certain rights to authors. (12) First, the manuscript should be treated confidentially and receive an unbiased opinion. Authors should be informed when the manuscript is received and when it is referred for peer review. Authors should be informed of the editorial decision about whether or not the study will be published. A reasonable time for this decision is eight to ten weeks after receipt. Reviews and comments of reviewers should be made available to authors, and authors should have the right to appeal any editorial decision. (10, 12) Authors have the autonomy to decide whether or not requested changes will be made to their manuscript, and whether or not those changes are fair or correct. Authors may remove the item at any time prior to publication. Finally, it should be possible to reply to comments received after the article has been published. (10-12)

AUTHORSHIP REQUIREMENTS

The model of authorship has grown from individualistic to collaborative. (1) The participation of several professionals sometimes belonging to different disciplines or areas of knowledge enriches research work. In general, it can be said that the author of a publication is a person who makes a contribution that must meet two requirements: the contribution must be an intellectual contribution, and it must be significant for the study. (14, 15) Aware of the importance of establishing clear rules that allow a participant in a scientific study to qualify as an author, a small group of medical journal editors met in the Canadian city of Vancouver in 1978. They formed a group that, in 1979, published the first authorship requirements proposed to the scientific community. The "Vancouver Group" is growing in number and acceptance. It is now called the "International Committee of Medical Journal Editors (ICMJE)". This committee meets annually to update or endorse authorship criteria that researchers of a publication must meet. (14, 15)

The document, "Defining the Role of Authors and Contributors", posted on its website, states, "In addition to being accountable for the parts of the work he or she has done, an author should be able to identify which co-authors are responsible for specific other parts of the work. In addition, authors should have confidence in the integrity of the contributions of their co-authors."(16) More concretely the ICMJE establishes that authors must: (17, 14, 15)

1. Make a substantial contribution to study conception and design, data collection, data interpretation or data analysis.
2. Participate in drafting or critically revising the manuscript in a way that makes an important intellectual contribution.
3. Have final approval over the version to be published.

It should be noted that not all journals adhere to these recommendations. Some explicitly have their own lists of authorship criteria. (18-20) The ICMJE explicitly states that those who have only participated in obtaining funding for the study or in data collection or general supervision of the team cannot be considered as authors. (17) Others who cannot be listed as authors include those who make no significant intellectual contribution, those who are limited to doing what they are told to do, (13) those who perform simple critical reviews of the article, and those who are "leaders " by title only. Thus, it should be clear that "the inclusion of authors who have not participated in the preparation of the article, with the aim of returning favors or payment to a hierarchical recognition, should be considered a fraud." (21, 22) The acknowledgments section is where you should include all the people who contributed to the study but whose contributions are not sufficient to consider them as authors of an article. Explicit written permission must be obtained from these people to include them in this part. (1) Examples of such contributions are technical support, material and financial support, financial relationships involving conflicts of interest, and other contributions that do not justify authorship. Finally it should be mentioned that there is another possibility to name authors called "authorship per contribution". (8, 23-26) This simply consists of

describing the individual contributions of each author or of clarifying who did what in the study. (27) This promotes transparency in the authorship process, although to date it has not become widespread. The ICMJE suggests it but has not implemented it as a formal proposal.

ORDER OF AUTHORS

Not only is the inclusion of the authors important, but the order in which they appear is also important. The order of authors gives an idea of the importance and weight of each author of the study. (2, 3) Ideally the order in which authors appear in the final manuscript should be established among all authors before the development of the project. In many cases the principal author, the person initiates and plans the study, is the person that determines this. Nevertheless, it is also acceptable for author order to be established by consensus. However, it is important that all participants know the order prior to publication (28, 29) in order to avoid unpleasant problems. (8) It is established that the first author is the person who did most of the work and the person who is usually responsible for final editing of the manuscript. The senior author, who is usually the initiator or project coordinator, is named last. (30) The other participants are listed in an order that should reflect the level and importance of their intellectual contributions. (28) An exception to this strict order of participation can be made in large studies that include a large number of co-authors. In these studies it is not possible to establish a hierarchy of contributions, so it is accepted that after the main author or authors, other authors are listed alphabetically. It is suggested that this be indicated on the first page of the text. (28) It is pertinent to note that neither the order nor the list of authors should be amended without the consent of the authors, nor should there be any change after the document has been received except when there is formal clonsent of the editors.

AUTHORSHIP IN MULTICENTER STUDIES

No doubt the development of multicenter studies involving patient care is very important. (31) This not only ensures the inclusion of a greater number of individuals but also enables the generation of knowledge that can be extrapolated and applied to wider populations. This requires the involvement of a large number of collaborators. But, do all authors really contribute to the same extent? How can we identify those who are truly contributing without discouraging others who might not be included among the authors but whose cooperation is necessary for development of the study as planned? (32-34) The ICMJE states that when a large multicenter group has conducted the work, the group should identify the individuals who accept direct responsibility for the manuscript who must fully meet the criteria for authorship/contribution as previously defined. When submitting a manuscript written by a group, the corresponding author must clearly indicate how she or he wants to be listed, and every individual author as well as the name of the group must be identified. Other group members are listed in the acknowledgments section. (17) This is the strictest mode, and it is considered to be correct. (8) Some scientists think that the viability or the quality of a study may be compromised if other partners who contribute research patients are not included. Thus, it is proposed that it might be acceptable to present not only authors but also all professionals who contributed patients. Another strategy would be to include an author for each site participating in the study and exclude authors who already have centers that meet the ICMJE guidelines. (1) Finally, there is also the possibility of authorship per contribution as described.

CORRUPTION OR FRAUD IN AUTHORSHIP

There are situations that are considered to be corruption in authorship. Among these we find "guests" or "rewarded authors". (35) These are people who have not participated in, or contributed to, the study, but who appear among the list of authors for reasons of prestige or hierarchical ancestry within a department or an institution. The main motivation may be to give more relevance to the study or to acknowledge the person included. This method differs from "authorship by coercion" (1) in which, in one way or another, a person of greater authority compels his or her inclusion in a publication despite the fact that he or she does not meet the requirements for authorship. Another type of fraud occurs with "ghost authors" (35, 36) who are professional editors who produced a manuscript and then disappear from the scene. They are usually paid by the pharmaceutical industry for writing articles related to a specific product. They thus avoid declaring any conflict of interest and also avoid any appearance in the acknowledgments. Since someone must be listed as the person responsible for the publication, there are "grafted authors" (8) who are usually prestigious doctors who provide unwarranted support for the content of the manuscript. It has been estimated that this phenomenon occurs in 75% of studies sponsored by the pharmaceutical industry. (37) Another kind of corruption of authorship occurs with "surprise authors" who are included without their knowledge for reasons such as mutual support and the return of favors for authorship. (1). Finally, it should be noted that there may also be fraud in the publication itself. Two examples are presented. One is the division of work within an entity into various units to increase the number of publications. This is known as "fragmentation", "salami publi-

cation" or "salami slicing." (8, 38) The other is redundant or duplicate publication in which the article partially or completely coincides with another. (3)

CONFLICTS OF INTEREST

Transparency is the best antidote to potential biases that might affect the credibility of a study. It is therefore essential to explicitly state whether or not there were conflicts of interest, and if there are any, to list them. Primary potential sources of conflicts of interest are economic, personal relationships and academic rivalries. (11) When there is a funding body or project sponsor, the type of contribution made to the study must be made clear. It must be explained that the researchers were fully responsible for the project and that they had independence from the sponsors or promoters. (12)

AUTHORS NAMES

Ideally, authors should appear the same way in all publications so that they can be identified and recognized in the literature. The names of the authors of a publication should appear as follows. (1)

On the first page, authors should appear with the following information in the following order: name of each author, affiliation of each author in the following order: service, hospital, university, city, country, email address. The complete physical address, telephone number, fax number and email address should be provided for the author responsible for the publication. It should be noted that international databases only record one last name following the first name. Combined with the possibility of a very common family name, this could hamper the identification of a particular author. For this reason, it is recommended that both surnames be written connected by a hyphen.

CONCLUSIONS

- Publication of research is essential to the dissemination and development of medical science.
- The authors of publications must be aware of the rights and responsibilities that they assume and must ensure they are enforced and respected.
- There must be clear, objective and universal standards for establishing requirements for listing the names of self-respecting authors of scientific publications.
- Transparency and accuracy throughout the research process is a sine qua non for building science. Included within this are the proper identification of the real authors of publication and the manifestation of conflicts of interest.

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