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Ethical aspects of peer review procedure in scientific publication

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V. Veressayev on delivery of new information in medicine (1901)

„Each number of every medical journal contained communications on dozens of new remedies; and thus it went on, from week to week, from month to month; a gigantic, insane and endless torrent, which bewildered the eyes: new doses, new medicines, new methods of introducing them, new operations and dozens, nay hundreds of human lives lost and healths ruined. Some of these innovations, like bubbles on the frothing surface of a torrent, leaped up and immediately burst, leaving behind one or two corpses. „

Publications are an important outcome of research

- Publications inform society about the content of research and its results, i.e. new knowledge;
- In modern times publications, their quantitative evaluation and different types of metrics (number of papers, number of references, impact factors etc) are the very influential formal labels of scientific activity of individuals and institutions;
- Due to the high significance in science, publications can also be an attractive place for research misconduct.
- The research article is a public record of the study given by authors.

Quality strongly matters in scientific communication!

- A universal tool for quality assurance is the following of certain appropriate standards;
- In scientific communication standards are established by different representative and influential institutions in the community;
- International Committee of Medical Journal Editors (ICMJE) and Committee of Publication Ethics (COPE) are important makers of standards in the field of publishing in science.

WMA Helsinki Declaration 2013

36. Researchers, authors, sponsors, editors and publishers all have ethical obligations with regard to the publication and dissemination of the results of research.

Researchers have a duty to make publicly available the results of their research on human subjects and are accountable for the completeness and accuracy of their reports. All parties should adhere to accepted guidelines for ethical reporting.

Negative and inconclusive as well as positive results must be published or otherwise made publicly available.

Sources of funding, institutional affiliations and conflicts of interest must be declared in the publication.

Reports of research not in accordance with the principles of this Declaration should not be accepted for publication.

ICMJE Uniform Requirements for Manuscripts (URM)

- In 1978 a group of editors of general medical journals met informally in Vancouver. This team was called Vancouver Group and afterwards International Committee of Medical Journal Editors (ICMJE).
- They published the first set of requirements for scientific articles in 1979. The current version of uniform requirements for manuscripts is from 2013,
http://www.icmje.org/urm_main.html

COPE — Committee on Publication Ethics

- COPE was established in 1997, now it has > 900 members from different fields of scientific inquiry;
- COPE deals with all aspects of scientific publication ethics;
- COPE has released several guidelines and other resources.

Types of articles

- Editorial articles
- Research articles – *NB! The most demanding format of research communication*
- Overview articles
- Case reports
- Letters to the editor
- Case reports
- Guidelines

Steps of editorial procedure to manage articles

1. Submission of manuscript and first reply about receiving it (asap, no more than few days)
2. First internal review by editor to confirm compliance of the article to the mission and authors' guidelines of the journal (1-2 weeks)
3. *Selection of reviewers, sending them manuscripts, and receiving their reviews (3-6 weeks)*

Steps of editorial procedure to manage articles 2

4. Analysis of reviews by editors and formulation of journal's decision on the submitted manuscript (few weeks)
5. Letter to the corresponding author about the decision (fully accepted, accepted after improvements or rejected) with comments and arguments (mostly based on reviewers' reviews)

Steps of editorial procedure to manage articles 3

6. Resubmission of a next version of the manuscript (several weeks or few months);
7. Final decision about the publication of manuscript. In case of acceptance this date appears in the article;
8. Preparation of final journal version of the article, including language editing and preparation of layout (few weeks).
9. Publication of the article in journal and/or online (time depends on queue).

Editorial procedure to manage articles

- Among measures of the journal's quality is also style and efficiency of editorial management and communication with authors and reviewers.
- Journals use for this purpose either special online platforms (e.g. Open Journal Systems, etc) or more traditional ways of communication mostly via email exchange.

Peer review and peer-reviewed journals

ICMJE URM 2013: Peer review is the critical assessment of manuscripts submitted to journals by experts who are usually not part of the editorial staff. Because unbiased, independent, critical assessment is an intrinsic part of all scholarly work, including scientific research, peer review is an important extension of the scientific process.

Selection of reviewers

- Review can be internal or external to journal;
- External reviewers can be members of journal's editorial board or nominated *ad hoc* by editor;
- Reviewing can be anonymous or more open;
- After proposal a potential reviewer must critically estimate his/her competence and time to complete review in time;
- In case of conflict of interest one should not accept the proposal to be a reviewer. In this case is good to inform editor about Col as soon as possible and suggest another competent candidate to this role.

Peer review and research ethics

- In addition to the narrow scientific competence, reviewers are (at least potentially) also important research ethics makers;
- If RECs review research proposals mostly before their real beginning, then a research paper reviewer works with the completed study;
- If REC's decision is a collective effort, then a reviewer should express her personal opinion.

COPE Ethical guidelines for peer reviewers (2013). Structure of the document

- Basic principles
- Issues on being approached to review
- Issues during review
- Issues when preparing the report
- Expectations after review

COPE Ethical guidelines for peer reviewers (2013). Basic principles:

Peer reviewers should:

- only agree to review manuscripts for which they have the subject **expertise required** to carry out a proper assessment and which they can assess in a timely manner
- **respect the confidentiality** of peer review and not reveal any details of a manuscript or its review, during or after the peer-review process, beyond those that are released by the journal
- **not use information obtained during the peer-review process** for their own or any other person's or organization's advantage, or to disadvantage or discredit others
- **declare all potential conflicting interests**, seeking advice from the journal if they are unsure whether something constitutes a relevant interest

COPE Ethical Guidelines for Peer Reviewers (2013). Basic principles:

Peer reviewers should:

- not allow their reviews to be **influenced by the origins** of a manuscript, by the nationality, religious or political beliefs, gender or other characteristics of the authors, or by commercial considerations
- be **objective** and **constructive** in their reviews, refraining from being hostile or inflammatory and from making libellous or derogatory personal comments
- acknowledge that peer review is largely a reciprocal endeavour and undertake to carry out their fair share of reviewing and in a timely manner
- provide journals with personal and professional information that is accurate and a true representation of their expertise
- recognize that impersonation of another individual during the review process is considered serious misconduct

Compliance to the style and rules of the journal

- Most peer-reviewed scientific journals have guidelines both for authors and reviewers, study them carefully during the job.
- Some journals ask directly from reviewers about ethical aspects of the study under review.

Scientific validity

- Majority of biomedical journals publish research articles written in the IMRAD (Introduction, Methods, Results, and Discussion) style.
- Bad science is unethical!
- In addition to the pure scientific aspects, all IMRAD sections may provide hints for ethical concerns of a study.

Title, authors' affiliations, introduction: ethical aspects

- Authors from industry/business or with combined affiliation deserve attention in the context of neutrality and possible COIs.
- Introduction describes intellectual context and goals of study – gives information about benefits of the study and justification of the study.

Abstract

- A short summary of a study which is mostly freely delivered and many readers limit themselves with reading of the abstract.
- Lack of consistency between abstract and article itself is misleading for whole research community.
- NB! IMRAD papers should have also structured abstracts.

Methods: ethical aspects

- Methods estimate type and design (NB! observation or experiment) of the study;
- Description of study participants: number, criteria of inclusion and exclusion, selection procedures including their vulnerability;
- Description of study procedures and interventions
- Permission of a REC;
- Methods give information about study burdens and risks.

Results: ethical aspects

- Results are usually the most technical section of the study;
- Results are to be presented in proper way with a necessary statistical analysis.

Discussion: ethical aspects

- Validity and consistency of conclusions with the results and goals of the study;
- Proper interpretation of the study in the context of 'state of art';
- Somewhere here data turn to the knowledge;
- Critical analysis of strong and weak sides of the study, including ethical burdens;
- Future directions;
- Helps finalize the opinion about risk-

Acknowledgements

- All contributors who do not meet the criteria for authorship should be listed in an acknowledgments section. These persons must give written permission to be acknowledged.
- Financial and material support should also be acknowledged.
- Declaration of potential conflicts of interests should be given.

References: ethical aspects

- Are relevant references given?
- Are there signs of redundant or biased referencing, e.g. too many references to authors' previous works? You need also analyze introduction and discussion in this respect.

Summary

- Peer review is an important cognitive mechanism in modern science;
- Reviewers are part of the ethical evaluation framework of the study before its publication;
- Peer review is by itself a demanding activity both from scientific and ethical point of view – evaluate critically your abilities to do the job!

References

- Uniform requirements for manuscripts submitted to biomedical journals. ICMJE; 2013: <http://www.icmje.org/icmje-recommendations.pdf>
- Ethical guidelines for peer reviewers. COPE; 2013: http://publicationethics.org/files/Ethical_guidelines_for_peer_reviewers_0.pdf