



ISSN: 2091-2749 (Print)
2091-2757 (Online)

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Peer review in scientific journal

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Peer review is the critical assessment of manuscripts submitted to scientific journals to facilitate 'a fair hearing' by experts in the field, to help authors and editors to improve the quality of reporting. It plays important role to ensure the integrity of research and publication, help maintain trust and ethical conduct of researcher and journal. By and large it is a quality control measure.

Peer review starts with internal review for the suitability of manuscript to the journal, whether author have followed the guidelines. Normally two experts are sent the manuscript for review to see for the originality of work, study design, methodology, and relevance of the research. When both reviewers advise to accept, or reject the work, the decision is easier for the editor. When there are controversies, the editor may send for 3rd review. The final decision is solely that of the editor.

Peer review is the basis of good science. Reviewing is a skill that requires to be developed. The reviewers are contacted by journal office, requesting their availability to complete the review within a certain time frame, usually 1-2 weeks. First abstract is sent to and if the reviewer agrees, the full manuscript is made available, either by email or by providing link to the online peer review system. The reviewers are required to declare any conflicts of interest to maintain ethics, keep the information confidential and do not publicly disclose or uses the information for personal gain. All comments regarding the review are communicated to the journal and not to the authors directly. The reviewers are requested for 'constructive, concise and polite' comments.

Common types of peer review are: 'Single-blind'- the reviewers know authors do not know reviewers, 'Double-blind'- both authors and reviewers are not aware, 'Open review'- both are aware of each other. Complete anonymity for 'equal peer-review' requires blinding for 'nominal or institutional prestige' during the 'preliminary' internal editorial review as well.

Peer review is a necessary part of research publication to maintain the quality of work, to check scientific integrity, significance, and originality by the experts from the respecting field. Some of the 'biases' during peer-review could be the 'prejudice' of reviewer against studies that contradict their work or beliefs. When treated unfairly, author can mention this to the editor and of course can submit to another journal. Post publication peer review is the comment by 'readers' and 'peers' in the field. Peer review may cause delays in publication.

Historically, in 1731, editor of Royal Society of Edinburg distributed the articles to experts in the field for review, with disclaimer that 'peer review did not guarantee truthfulness or accuracy' and authors themselves were responsible for their own research. This holds true even today. The peer review process varies, until 1976, the Lancet did not implement it. The Journal of the American Medical Association (JAMA) has 'internal review panel' and rarely sent manuscripts to outside experts. Today almost all biomedical journals apply some form of peer review.

The journal reserves the right to decide types of review, which manuscripts to send and to how many reviewers. Normally reviewers are notified of the final editorial decision to accept or reject a paper. Mostly, reviewers provide the service voluntarily and as such they are acknowledged, by mentioning their name in article or as 'list of reviewers' yearly.

Peer review is refereeing process to evaluate and critique by experts in the field to provide authors with feedback to improve the work to ensure published research is accurate and

trustworthy. The process has stood the test of time to meet increasing workloads, maintain quality and detect fraud in the scientific community, more so in the era of evidence-based medicine and digitalization of information.

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