

Peer review: rigour, responsibility, and scientific training

Peer review occupies a central place in contemporary science, yet it rarely receives attention commensurate with its practical importance. It is neither an elegant nor an infallible mechanism, but an essentially human process, permeated by biases, inconsistencies, and errors of judgement. Even so, it remains the principal instrument available for exercising some degree of filtration over the scientific evidence circulating in the biomedical literature.^{1,2}

In the absence of qualified peer review, methodological flaws assume a veneer of validity, tenuous inferences are recast as assertive conclusions, and clinical or public policy decisions come to rely on findings that would not withstand rigorous technical scrutiny. Such distortions produce tangible effects on clinical practice, guideline development, and resource allocation, with potentially adverse consequences for individuals and health systems.^{1,2}

The empirical literature shows that peer review neither guarantees scientific truth nor eliminates bias, but contributes consistently to the identification of gross errors, the enhancement of reporting, and the detection of methodological shortcomings prior to publication.^{1,2} Evidence from methodological trials and systematic reviews indicates that the involvement of trained reviewers, particularly those with statistical expertise, is associated with measurable improvements in the final quality of manuscripts, especially in the reporting of methods and results.^{3,4}

Within this framework, the reviewer's role requires clear definition. Reviewing is not a judgement of intent, nor an assessment of moral merit or individual effort of authors. The review must focus on the work itself: the formulation of the research question, the adequacy of the study design, the coherence between methods and analysis, the consistency of results, and the proportionality of conclusions to the available data.^{1,2,5} When these elements fail, critique should be direct, technically grounded, and intelligible to the editorial office. Scientific rigour does not require aggressiveness or personalisation of judgement; it requires method, conceptual command, and argumentative consistency.^{1,5}

Accumulated editorial experience suggests that reviews excessively harsh in tone, even if accurate in content, rarely produce concrete scientific gains. More often, they trigger defensive responses, prolong editorial processes, and impede substantive revisions.^{2,5} This does not imply avoiding recommendations for rejection when these are warranted. Rejection is a legitimate component of the editorial process. Even so, a review that culminates in rejection may still fulfil an important informative function by clearly articulating why a study falls short of the journal's scientific or editorial standards.^{1,2}

Beyond its role in the editorial workflow, peer review has a formative dimension that is frequently underestimated. Reviewing manuscripts constitutes one of the most demanding and effective forms of advanced scientific learning. The practice compels engagement with concrete study designs, real statistical decisions, and interpretations that overreach what the data can sustain.^{3,4} It is an ongoing exercise in intellectual auditing.

This formative effect is not confined to early-career researchers. On the contrary, it tends to deepen with experience. More experienced investigators become able to discern subtler layers of quality and error, identifying less obvious biases, inferential weaknesses, and problems of transparency that escape less trained readings.^{3,4} Peer review thus functions as a continuing mechanism of methodological advancement and refinement of scientific judgement.

In recent years, the activity of peer review has become no longer entirely invisible. Initiatives that allow the verifiable record of reviews, while preserving editorial confidentiality where appropriate, have contributed to making explicit the relevance of this activity within the scientific ecosystem.⁵ Although formal recognition should not constitute the primary motivation for reviewing, its existence helps reposition peer review as qualified scholarly work rather than an ancillary task.⁵

It is within this context that the Brazilian Journal of Mother and Child Health (BJMCH) explicitly affirms the centrality of peer review to the scientific quality, methodological consistency, and credibility of the journal. Peer review is understood as a cornerstone of the editorial process. As a concrete expression of this commitment, from 2026 the journal will implement the systematic assignment of three reviewers per manuscript, expanding the diversity of critical perspectives and reducing reliance on individual judgement.

In parallel, BJMCH has been expanding its reviewer base through the incorporation of new specialists and the strengthening of strategic areas, with the aim of ensuring more consistent and methodologically robust evaluations. Within this same movement, annual formal recognition has been instituted for reviewers who contribute on a sustained basis throughout the editorial year, with formal acknowledgement in the final issue of the year.



A systematic process for the editorial appraisal of review quality will also be led by the Associate Editors. This monitoring will allow the identification of reviews that are particularly rigorous and useful for editorial decision-making. On this basis, an annual policy of recognition will be established for reviewers who distinguish themselves over the course of the year, governed by regulations publicly available on the journal's institutional website.

As part of this broader effort, BJMCH is implementing mechanisms for editorial fast-tracking for reviewers with a consistent record of contribution. This includes expedited evaluation of their own manuscript submissions, overseen directly by the Editor-in-Chief and Executive Editors. This represents recognition commensurate with the meaningful contribution of these professionals to the functioning of the journal.

In addition, BJMCH has established, in partnership with the Graduate Programme in Comprehensive Health at the Professor Fernando Figueira Institute of Integral Medicine (IMIP), a structured programme for the training of scientific reviewers. Offered as a regular doctoral-level course and open to participants from other programmes as well as interested faculty, the programme centres on the preparation of peer reviews under structured editorial mentorship, with direct supervision by Associate Editors and the Editor-in-Chief.

Peer review will remain a human process—fallible and open to improvement. For this very reason, investing in its qualification, clarifying responsibilities, and strengthening reviewer training is not an optional endeavour. It is a necessary condition for preserving the integrity, social utility, and credibility of biomedical science.^{1,2,5}

No scientific journal can be robust without reviewers who are well trained, methodologically competent, and appropriately recognised. Investment in the training and appreciation of reviewers constitutes a direct investment in the quality of published science and in the institutional credibility of the journal.

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