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The Peer Review Process

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Peer review has a long history dating back to the early days of scientific publishing. Its role has been redefined many times. It became more widely adopted after the second world war at a time when there was a great increase in the volume of scientific submissions to journals. There have been 9 international peer review congresses since 1989, which are held every 4 years[1]. The 10th international congress on peer review and scientific publication will be held in September, 2025. The congresses discuss how science is produced, evaluated, published, and disseminated. The ever present challenges are about being fair, open, and transparent. The number of science journals and articles is steadily increasing. One of the major aims of gathering is to protect the integrity of the peer review process.

Reviewers of scientific papers for medical journals provide an invaluable service. Their evaluations greatly improve the quality of submitted manuscripts. It is a time-consuming process and we are fortunate that so many experts in their individual fields are prepared to give up their valuable time when asked to review a paper[2]. Peer review is a quality control measure for medical research. It ensures that the paper is accurate, relevant, and significant. This is important because the prestige of a journal is largely derived from the quality, relevance, and scientific accuracy of the papers that it publishes. It promotes patients confidence about the delivery of clinical care. The public feel that a study published in a peer journal has passed a standard of quality. Reviewers advise and make recommendations. They are accountable to the editor. It is the editor's decision whether a paper is accepted for publication. In circumstances where the authors feel that the referee's review is harsh or inaccurate, it is usual for an editor to seek another independent reviewer.

Reviewers provide subject knowledge, good judgement, and an honest and fair assessment. They identify the papers that have little scientific merit and should not be considered for publication. They play an important role in pointing out those studies with poor quality data or actual fraud. While there are some misgivings voiced from to time, no one has come with a better, alternative system. We ask reviewers to mark a paper 1-5 for the following 9 items – quality of the abstract, quality of the introduction, design of the methods, description of the methods, description of the results, the tables, the figures, the quality of the discussion, and the quality of the conclusions. The common reasons for rejection are poor structure or poor quality. Poor structure include failure to adhere to the journal's guidelines, poorly written narrative, flawed methodology, inaccurate results, and weak discussion. The quality of a paper relates to whether there are any new findings and whether it adds anything to the literature.

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The identity of the reviewer remains anonymous for many journals including the IMJ. We feel that this provides the referee with greater latitude when undertaking the critical assessment of a paper. Also many commentators point out that an open rather than anonymous system would lead to more bland, timid reviews. Some potential referees would refuse to assess a manuscript if their names were revealed. Younger referees may be fearful of assessing a paper submitted from more senior colleagues.

The review process has become more structured and better defined over time. In the 1970s and 1980s there were a number of high profile cases of research misconduct, some having serious medical consequences. This caused a rethink among the community of medical journal editors. Clinical trials are registered at inception. This in keeping with the acceptance that the best evidence for effectiveness of health care treatments originate from the findings of randomised clinical trials. The checklist includes[4] methodological criteria – randomisation, blinding, sample size calculations, and exclusions.

In 1989, JAMA and the BMJ convened the first peer review congress. Since then the congress has been held every 4 years. The objective of these gatherings is review the processes of selection of manuscripts.

One of the major changes in scientific and medical publication over the last two decades has been the advent of the open access medical journals[3]. These journals charge the authors of an article a processing fee. These journals publish more than 2,000 full articles annually. The more well-known ones include PloS One, Scientific Reports, and BMJ Open. One of the advantages is that access to the content is free. On the other hand, the authors are charged a substantial article processing fee. Mega journals claim to publish papers based on whether they are scientifically sound rather than important and novel. Accordingly their acceptance rate range for 20% to 70%.

The Covid pandemic had a major impact on medical journals and their peer review systems. There was a pressing need for the rapid publication and dissemination of the evolving discoveries about Covid-19. Wellcome had called for fast, transparent, open access academic publishing to help humanity deal with the crisis. The performance of 97 major medical journals has been examined4. The peer review processes were found to be more agile and responsive than had been anticipated. During the pandemic papers were reviewed 2 or 3 times faster. It was also reassuring that the quality of the reviews were not deemed to be inferior.

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The peer review process continues to be the foundation for the credibility of scientific findings in medical journals.

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