

Editorial

PEER REVIEW TO IMPROVE QUALITY OF MANUSCRIPTS: Are we ready for Open Peer Review?

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During the last Editorial Board meeting of Pakistan Journal of Medical Sciences held at Karachi on May 18th 2002 when we were discussing the quality of peer review and how to improve it, one of the participants remarked that " You want us to do peer review but you have never told us how to do it and none of us is adequately trained to perform this task". That motivated us to look into this aspect in detail, study the whole peer review system and also find ways and means to organize some workshops on the topic.

What is Peer Review?

It means that experts review the papers submitted to a journal for publication and suggest what changes should be made to improve its quality before it is accepted for publication. Or in other words this is a mechanism whereby it is used to help decide which manuscripts should be published in journals and how they should be changed before publication. Peer review ensures that papers are of sufficient high quality, select those papers, which are of great interest to their readers and finally polish those papers, which are selected. Peer Review at its best provides a prompt, detailed, constructive and well-founded criticism to the benefit of researchers and consumers of research. But at it's worst it is expensive, slow, subjective and biased, open to abuse, patchy at detecting important methodological defects

and almost useless at detecting fraud or misconduct The Editors do provide a checklist for the reviewers. Peer review does reveal many technical lapses, which could be corrected before publication.¹ However peer review cannot be relied upon to detect academic fraud or misconduct in science, which is known as fabrication, falsification and plagiarism in proposing, performing and reporting research.^{2,3} In fact it is designed to detect flaws in the design, presentation, and analysis of science. It is not designed to detect deliberate deception, fabrication or entire experiment, which only those on the spot can discover.

Table-I: Objectives of Peer Review

1. To detect flaws in the design of the study.
2. To detect deficiencies in the analysis of the results of the study
3. To see that the presentation of the paper is in accordance with the guidelines of the International Committee of Medical Journal Editors (ICMJE)

In historical perspective Editorial Peer Review has developed in a slow and haphazard way and it became institutionalized only in 1940s. Despite its deficiencies, many researchers involved want to continue to practice it because they feel other alternatives like audit are worse. Peer review it is said existed ever since people began to identify and communicate what they thought was new knowledge. Internal and external peer review was put into practice by journals during the 18th century in order to assist editors in the selection of manuscripts for publication. In the past since the Editors

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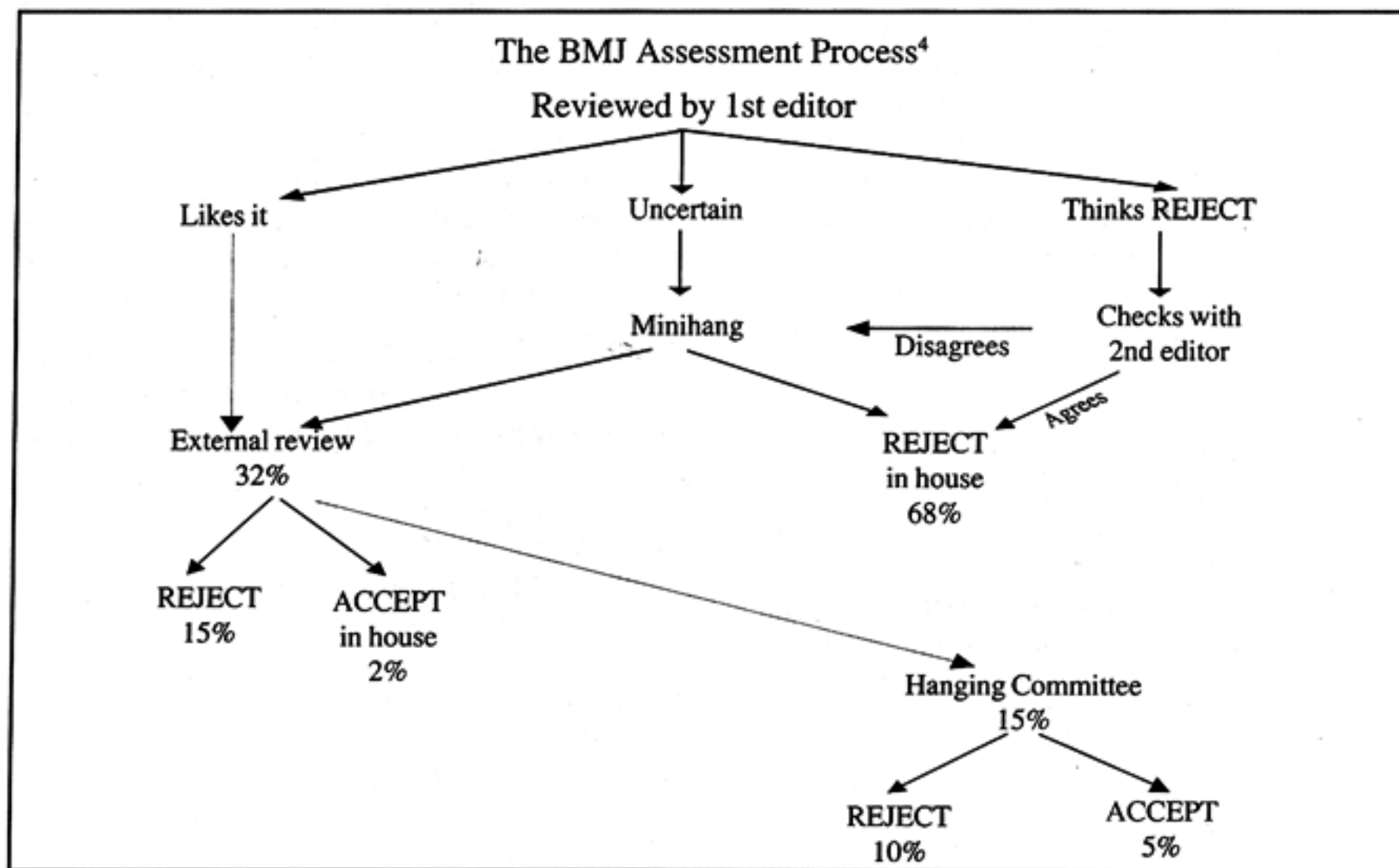
wrote much of the journal contents themselves, so not many were interested in peer review. Moreover in view of the paucity of material to fill the pages, editors did not give much importance to peer review. At times the editors were also under pressure to publish material sent by members of the Societies, Associations that owned the journal. It was Stephen Lock who published the first book on peer review entitled "A difficult balance" in 1985. Later the first congress on peer review was held in Chicago in 1989, the second congress was also held in Chicago in 1993. The third congress on peer review was organized in Prague in 1997 while the 4th congress on peer review took place in Barcelona during the Year 2001.

As usual with all other medical journals we also selected some senior members of the medical profession with academic interest to review the manuscripts, which we receive for publication. We mask the name of the authors so that their identity is not disclosed to the reviewers. Similarly the authors are not informed as to who reviewed their manuscript. However, at times it is difficult to maintain this secrecy and in some

cases the reviewers do identify the authors. The reviewers do this job purely on honorary basis. Sometimes the reviewers are discourteous; make unfounded suggestions, which leads to anger and frustration among the authors.

Peer Review system as practiced by BMJ⁴

Peer review is expensive in financial and human terms. British Medical Journal receives about hundred papers every week and seven thousand papers annually. Their overall acceptance rate is 7%. In order to acquaint myself about the peer review system being practiced by the British Medical Journal, during my recent visit to UK, through the BMJ offices I managed to get an appointment with Prof. Roger Robinson, Professor of Pediatrics who is affiliated with the BMJ as one of the Editors. According to him "the weekly meeting of the BMJ Editors deals with papers at intermediate stages in the assessment process. The accompanying chart outlines what happens to papers submitted to the BMJ.



Each new paper is allocated to one of the in-house editors. After reading it, the editor may make one of the following three decisions:-

1. The paper is not suitable for the BMJ and it should be rejected. It will usually then be read by a second editor to confirm this decision. If the two editors disagree, the paper will be discussed at the minihang meeting.
2. It looks a possible BMJ paper in terms of interest, scientific reliability and originality. It will therefore be sent out for external review.
3. In case the first editor is uncertain about how interesting or scientifically reliable or original the paper is, this manuscript will be taken to the minihang meeting for discussion.

Some papers in category one and all those in category three may therefore come to the minihang. The question being asked is "whether the BMJ staff is interested enough to send those papers for external review?"

About one third of papers submitted to the BMJ go for external review. If they come back with a generally favorable report, they go to the minihang irrespective of the fact whether or not they have been there before, for a decision on whether they go to an editorial advisory committee (hanging committee). The hanging committee includes two editorial advisors who are practicing clinicians and/or researchers, a statistician, and or members of the in-house editorial staff. It makes the final decisions whether BMJ wants to publish that paper. The minihang mainly considers papers that have been read in house, to decide whether they want to send them for external review, and papers that have been for external review, to decide whether to send them to the hanging committee. The minihang also considers appeals on rejected papers, and tricky editorial problems on matters such as research ethics and publication (mis) conduct. This is used to keep track of what papers are going through the system, to identify duplicate or overlapping

submissions, and to identify papers that might be linked to each other if they are accepted for publication in the BMJ."

Previously BMJ also practiced masked or blind peer review but the current editor of BMJ Dr. Richard Smith felt that open peer review would be more useful. The reviewers will be accountable and the quality of reviews will also improve. We were reluctant about the success of this in the beginning but later it was proved that Dr. Richard Smith was right. Hence we in the BMJ now practice open peer review, Prof. Roger Robbins stated.

Stephen Lock, Richard Smith former and the current editor of BMJ as well as Drummond Erennie Deputy Editor of JAMA feel that there is no ethical justification for the closed anonymous system of peer review. After all the knowledge that their names will be disclosed to the authors and the public cannot fail to make reviewers more responsible in their comments. It makes the reviewers truly accountable.^{5,6}

It is also reported that external peer review greatly broadens the expertise available to the editors as it detects flaws in order to select the best manuscripts for publication.⁷ There is now enough evidence that peer review improves manuscript quality⁸ and readability.⁹

Like editors, reviewers can also be partial, biased, jealous, ignorant, incompetent, malicious, corrupt or incapacitated by conflict of interest. Peer review could be unreliable, unfair, and fail to validate or authenticate. Since there are no clear standards and structure, it is open to every sort of bias. Some researchers also feel that peer review tend to block work that is either innovative or contrary to reviewer's perspective and it causes unnecessary delay in publication of manuscripts.

Gender bias in peer review

Peer review is one of the entry criteria used by indexing services. It is reported that female peer reviewers accepted three times as many articles from female authors whereas male peer reviewers accepted equal proportionate from female and male authors. Goldberg also found

general bias on the part of women reviewers against women authors and this was strongest for the traditionally male fields.¹⁰ In Pakistan we have a few women editors and the number of female authors is also very limited. In our experience only those female reviewers were found harsh and biased to some extent, who were victims in their professional career because of nepotism, favoritism and intellectual corruption in selection of faculties for our medical institutions. On the contrary those who were successful in making room for themselves in academic institutions, tended to be more helpful and accommodating to the authors. Studies also report that Peer reviewer tended to reject articles if the results were different from their personal professionals beliefs.¹¹ We have a similar experience with the reviewers.

Numerous other studies have also reported that peer reviewers and editors are biased against less well-known authors and institutions.¹² Cox reported that peer reviewers tend to give more positive advice when an article comes from more prestigious and well-known groups or institutions.¹³ However reviewers were more critical when they are unaware of the author's identity.

In 1994 Lancet accepted just 8% of manuscripts received from developing countries while NEJM accepted only 2% of manuscripts from developing countries. Former editor of NEJM Jerome P. Kassirer believes that "Very poor countries have much more to worry about than doing high quality research. There is no science there."¹⁴ Lancet has now appointed an ombudsman to deal with complaints against the journal's peer review process.

Since different journals have different goals, readership and different system of peer review system; hence it is difficult to make a comparison. In the conventional system reviewers are selected from senior academicians and they do not sign their reviews. Generally it is felt that the best reviewers are senior-accomplished scholars. They have the expertise and wisdom to give good advice. However in practice and in different studies it has become known that relatively junior academicians provide the best

reviews. Peer reviewers who are at early stages of their academic career produce much better reviews than more senior ones. Younger reviewers who are trained in epidemiology and statistics produce the best reviews. This is also our experience in a number of cases.

There is another school of thought who feels that masking or blind reviews improve quality of reviews by removing the bias. But in many cases it is not possible and the reviewer's can very well figure out the origin of the manuscript from references, and studies quoted by the authors. We in Pakistan have a similar experience because in certain cases, despite best efforts to mask the name of the authors, the reviewers were able to identify very closely the authors.

Yet another study found that blinded reviewers were less critical of papers from well-known authors than were non-blinded reviewers. Blinded reviews reduced bias against well-known authors caused by the academic competition or high expectations.¹⁵ Open system of peer reviews in which reviewers identity would be revealed to authors and possibly to the readers have also been suggested as a means to minimize bias against or in favour of certain authors. The arguments are that reviewers who sign their reviews are more accountable for damning statements. Rejection of a manuscript does discourage some writers who eventually give it up without giving it another try.

Arguments for and against open peer review

While open peer review makes the reviews more accountable, it has certain drawbacks. Junior reviewers may fear of reprisal by the established authors. It can lead to an elite class of researchers network favoring established authors. It may also create resentment and animosity and can also result in higher acceptance rate. And finally it will mean more work and problems for the Editors.

There is usually greater tendency among authors of industry-supported trials to preferentially submit positive findings of publication. Industry is also more likely to suppress or may not be interested in publication of the

results, which are not favorable.

Conflict of interest

Reviewers and editors should withdraw from the process of peer review if they have a conflict of interest. The International Committee of Medical Journal Editors (ICMJE) defines conflict of interest as "when a participant in the peer review process, author, reviewer or editor has ties to activities that could inappropriately influence his or her judgment whether or not judgment is in fact affected." ICMJE feels that public trust in peer review process and the credibility of published articles depend in part on how well conflict of interest is handled.

Confidentiality

Authors expect that once they have sent an article to a journal it will be treated as their exclusive property. Editors and reviewers treat their manuscript confidentially. They will neither disclose the contents to others nor make personal use of them. DeBakey in her guidelines for reviewers states that "Unpublished manuscript is a privileged document. Please protect it from any form of exploitation. Reviewers are expected not to cite a manuscript or refer to the work it describes before it has been published. And to refrain from using the information it contains for advancement of their own research."¹⁶

Pay Journals

The pay journals, which mostly publish manuscripts, which are not of much interest to a larger section of readership besides drug trials sponsored by the Pharma industry, have a rejection rate as little as just 5-10%. Mostly industry – sponsored studies are published in these journals. These journals just require papers of adequate standard. They publish these articles, which are of limited interest as long as authors are prepared to pay for the publication. The industry supports these journals by bulk purchase of reprints of their studies, which are published in these journals.

HOW TO DO PEER REVIEW OF A MANUSCRIPT¹⁷

Peer reviewer is a person who assesses the merits of a manuscript submitted for publication in a journal. An ideal reviewer should be totally objective. Peer review is considered a central activity in increasing the quality of manuscript. Using evidence to guide the peer review process has given birth to the Evidence Based Peer Review. On the whole peer review is a poorly understood process, which is becoming the focus of intense scrutiny and controversy these days among the scientist, researchers and academicians. The following are some of the guidelines for the reviewers for reviewing a manuscript:

- * Peer reviewer must ask for enough time to meet the deadline. In case they need more time, they must communicate it to the editor of the Journal concerned.
- * Review the manuscript in a systematic way. Study the instructions to the authors published in the particular journal from where the manuscript is received. The reviewers must consult the checklist, which is provided by some of the journals.
- * The points which should be considered by the reviewers include originality of the work, strength and weaknesses of the manuscript, ethical aspects, presentation, clarity, interpretations of results, future directions and whether the message is conveyed properly which is understood by the readers.
- * Write the report and summarize the comments about the manuscript. This report should help the editor judge what to do with the manuscript and the authors how to improve their manuscript. Use clear, easy to understand language. The report must be typed instead of sending the hand written notes.
- * Summarize the manuscript in a paragraph before detailed comments. At times authors do not agree with the reviewer's comments because the reviewers fail to understand the manuscript they were reviewing properly.

- * Criticism should be constructive. The reviewers must remember that the authors had spent lot of time in planning and conducting the study, writing and re-writing the manuscript before submitting for publication. They do not gain anything from destructive criticism. Comments about the language, grammar and spellings should be reserved for the editor and not for the authors. Even if the paper is not recommended for acceptance, reviewers should advice authors on the ways to improve it. Harsh abusive comments have no place in review.
- * Do not use this opportunity to take revenge from the authors. The reviewer must concentrate on the manuscript rather than on the authors. Editors usually do not communicate disparaging comments to the authors.
- * Any conflict of interest must be mentioned in the review even if the reviewer has already communicated this to the editor.
- * During the process of reviewing a manuscript, if the reviewer has received some help from others it must be acknowledged.
- * The reviewer does not have to comment on each and every aspect of the manuscript. There may be areas beyond his/her expertise. It should be communicated to the Editors.
- * Mention the source of your comments, as it will strengthen your comments.
- * Keep the manuscript confidential. Editors trust you; hence do not betray their trust. In some cases Editors do communicate the comments received from other reviewers on the same manuscript. It can help the reviewers to assess their own performance.

Peer review system relies on the honesty of reviewers and editors and they have a particular duty to treat submitted material as confidential. Some journals allow authors to list people who should not be used as reviewers for their manuscript while some journals ask the authors to name the persons to whom their manuscripts should be sent for review. It must be remembered that Reviewers are neither trained nor rewarded. They often do it poorly, slowly, and

inefficiently. References are most often not examined carefully. Raw data is not scrutinized and conflict of interest is not declared. Explanations are not given and appeals against the rejection are not heard. But in spite of these numerous deficiencies, peer review does have a future.

Understanding of aspirations, concerns, limitations of publisher's as well as editors, reviewer's and authors can make the life of all of them much easier. All the problems may not be solved but peer review will rely on fine balance between the rights and responsibilities of all these groups. In short the responsibility of keeping the peer review system-working lies on all i.e. authors, editors and the reviewers in their respective roles. The editors of medical journals published from the developing Third world countries in particular have some specific problems. Neither publication of these journals is financially viable, nor the quality of manuscripts is of that high standard. They totally depend on Pharma Industry support through advertisements, which is their major source of revenue. Those who do conduct some original work are most often tempted to get it published in prestigious journals published from overseas. Indian authors as compared to Pakistani authors are more nationalist. They publish their research in Indian Medical Journals. That is why over two dozen Indian medical journals are covered by the Medline-Index Medicus of National Library of Medicine Bethesda, USA. One wishes to express that there are similar feelings amongst Pakistani authors as well.

A critical analysis will reveal that the number of medical and dental journals published from Pakistan which practice peer review is very few. We tried to practice open peer review partially in case of a dozen manuscripts during the last two months on random basis. The name of the authors were not masked. However, the authors were not communicated the names of the reviewers along with the comments. Although it did slightly improve the quality of review but the comments about new and not so known authors were discouraging. In three cases the reviewers were reluctant to review the manu-

scripts by senior academicians, as they did not want to antagonize them unnecessarily. We also found that professional jealousy also had some role to play in a few selected cases wherein the reviewers were not fair to the authors. As such although open peer review may be ideal for the future, we don't think the time has yet arrived to start practicing open peer review in Pakistan. In a few years time the situation is definitely going to change. That will be an appropriate time for doing away with the blind peer review and to replace it with open peer review system. Till such time more random trials on open peer review could throw some light on its merits and demerits in our peculiar setting. Realizing all these problems and difficulties Pakistan Medical Journalists Association (PMJA) had earlier took the initiative and started holding a series of seminars and workshops on Medical Writing since 1991 and also published a book on Medical Writing (2nd Edition)¹⁸. PMJA has once again risen to the occasion. It has worked out a plan to organize workshops on peer review at Karachi and Lahore during September 2002. It is hoped that it will go a long way in helping the editors as well as reviewers to understand the concept of peer review in a better way. This will ensure better quality of papers accepted for publication.

To begin with we in Pakistan Journal of Medical Sciences have also decided to give an option to our reviewers. If they agree, we will communicate their signed comments / reviews to the respective authors. In the second phase the name of authors will also not be masked on random basis, while sending manuscripts for review. Eventually in the coming three years we hope to totally switch over to open peer review. We are sure it will help improve the quality of reviews as well.

Under the present circumstances the editors of medical and dental journals published from Third world countries have to struggle and work hard trying to improve the quality of the manuscripts they accept for publication and improving the overall standard of their journal, find ways and means to become financially

viable so that their total dependence on Pharma Industry support is overcome to some extent. They have to work under lot of stresses and strains. They are also under pressure from the authors and cannot afford to antagonize the reviewers with repeated reminders since all of them work in an honorary capacity. As such they have to strike a balance between these conflicting demands. As is evident from the above, we still have a long way to go.

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