Does exchanging comments of Indian and non-Indian reviewers improve the quality of manuscript reviews?

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ABSTRACT

Background. The quality of peer reviewing in developing countries is thought to be poor. To examine whether this was so, we compared the performance of Indian and non-Indian reviewers who were sent original and review articles submitted to The National Medical Journal of India. We also tested whether informing reviewers that their comments would be exchanged improved the quality of their reviews.

Methods. In a prospective, randomized, blinded study, we sent 100 manuscripts to pairs of peer reviewers (Indian and non-Indian) of which 78 pairs of completed replies were available for analysis. Thirty-eight pairs of reviews were exchanged and 40 were not. The quality of the reviews was assessed by two editors who were unaware of the reviewers' nationality and whether they had been told that their reviews would be exchanged. The quality of the reviews was scored out of 100 (based on a pre-designed evaluation proforma). We also measured the time taken to return a manuscript.

Results. Overall, non-Indian reviewers scored higher than Indians (mean scores non-Indians first, 56.7 vs. 48.6, p < 0.001), especially those in the non-exchanged group (58.4 vs. 47.3, p < 0.001) but not the exchanged group (54.8 vs. 50.0, p = 0.06). Being informed that reviews would be exchanged did not affect the quality of reviews by non-Indians (54.8 non-exchanged vs. 54.8 non-exchanged) or of reviews by Indians (50.0 exchanged vs. 47.3 non-exchanged). The editors' assessment of the reviewers matched well (r = 0.59, p < 0.001). Non-Indians took the same amount of time as Indians to return their reviews, although the postage time was at least eight days longer.

Conclusions. We found that non-Indian peer reviewers were better than Indians and informing them that their views would be exchanged did not seem to affect the quality of their reviews. We suggest that Indian editors should also use non-Indian reviewers and start training programmes to improve the quality of peer reviews in India.


INTRODUCTION

The difficulties of maintaining a high scientific quality and credibility in journals published from developing countries are well known. The scientific community is small and authors prefer to publish their best articles in international journals for extra weightage in job opportunities, better visibility and increased prestige. Another reason why Indian authors prefer to publish abroad is the 'better peer reviewing system' of international journals.

The peer review system has its proponents and opponents. However, it is still the best method available to assess the quality of a manuscript and recent studies have shown that manuscripts are significantly improved after peer review. Many authors have called for improvements in the peer review process. At The National Medical Journal of India (NMJI), our experience has been that there is a wide variation in the quality of reviewers. Some Indian reviewers, because of the specialized nature of articles or perhaps inexperience, appear to be less knowledgeable than non-Indians, while some non-Indian reviewers are sometimes patronizing to Third World authors. To determine whether this was actually the case, we attempted to design an efficient and cost-effective method to improve the quality of our peer reviews by simply informing reviewers that their comments would be exchanged with those of other reviewers. This involved adding a single sentence to our request for review that 'the peer reviewers' comments would be exchanged'. We routinely send out each manuscript (original research and reviews) to two reviewers—one Indian and one non-Indian. We felt that this process would also give us an opportunity to compare the performance of Indian and non-Indian reviewers and the time taken by them to send their comments.

METHODS

Selection of reviewers

This study was conducted from July 1993 to October 1994 at the editorial office of the NMJI—a multidisciplinary medical journal that is published bi-monthly. The journal is included in the MEDLINE system (Pubmed and Index Medicus) and the Science Citation Index. Reviewers were selected from our database, according to the authors' suggestions, the editors' knowledge of the field, from the authors' names in the reference list or with the help of our colleagues overseas and editorial board and working committee members. The non-Indian reviewers were from the UK (50), USA (15), Canada (3), Australia (2), Norway, Finland, The Netherlands, France, Germany, Israel, Belgium (one each) and the Indian reviewers were from leading institutions in different parts of the country. A broad range of subject areas was covered.

The usual covering letters along with the request-for-review form were generated using a customized software programme and the dates for sending out the manuscripts to the reviewers were recorded. However, if the manuscript had been forwarded by the reviewers to their colleagues, or had been returned to us and then sent to someone else, the amended dates were entered manually.
The reviewers were asked to evaluate a manuscript according to our request-for-review form, paying particular attention to the importance of the question asked, originality, methods, presentation and appropriateness for the journal. The reviewers were also provided with a questionnaire along with the manuscript evaluation form (different for original and review articles) which included a covering letter. Reviewers were asked to recommend whether the paper needed urgent publication, major or minor revision. There were separate sheets for comments to the authors and confidential comments to the editors. The reviewers were requested to send their comments within a month or, if they were unable to do so, return the manuscript immediately.

Study design

One hundred consecutive manuscripts of original and review articles submitted to the NMJI during the period July 1993 to October 1994 were sent to pairs of reviewers—one Indian and one non-Indian—in a prospective, randomized, blinded manner.

Randomization

Randomization was done using random number charts and the sealed envelope technique. For the exchanged manuscripts, the reviewers were informed that a copy of their comments would be sent to the other reviewer, while the non-exchanged group received our standard covering letter only. The reviewers were not blinded to the names and affiliations of the authors. After receiving the reviewers’ comments, the relevant dates were recorded, from mailing the manuscript to the receipt of comments. The time taken from mailing the manuscript to the receipt of comments, i.e. the number of days between posting the manuscript and receipt of the review by ordinary post in India is 2 to 3 days, whereas the number of days between posting the manuscript and receipt of review from the UK and other countries is 7 days, and from USA and Canada 10 days. The comments of the reviewers of the exchanged group were then forwarded to the other reviewers of the manuscript. The manuscripts for which revision was advised were returned to the authors for responses to the reviewers’ comments and they were asked to answer the reviewers’ queries point-by-point. The authors of rejected manuscripts also received the comments of both reviewers.

Evaluation of reviews

The original manuscripts, reviewers’ comments, revised manuscripts, and authors’ answers were given to two editors (editors I and II) to evaluate the quality of the reviews. The two editors were unaware of the reviewers’ names, nationality, institutional affiliations, and whether or not they had been told that their comments would be exchanged. Each editor scored the review out of 100 (based on a pre-designed proforma; Table I), according to whether it examined the importance of the research question, targeted the key issues, assessed the validity of the methods, the quality of presentation and provided an overall assessment. The marks given by each editor to the Indian and non-Indian reviewers of exchanged and non-exchanged comments were then entered into the computer. The number of days taken by the reviewers to complete the task was also recorded.

RESULTS

Seventy-eight pairs of replies were suitable for analysis (the others were incomplete because one or both reviewers did not respond despite reminders). Three reviewers, one Indian and two non-Indian, detected wrong data, duplicate publication and plagiarism, respectively, in manuscripts which were also rejected. There were equal numbers of non-responses from Indian and non-Indian reviewers (9 each). Out of seventy-eight pairs of reviews, thirty-eight pairs of reviews were exchanged and forty were not (Fig. 1). Table II indicates the grading pattern of the manuscripts by the reviewer.

Overall, non-Indian reviewers scored higher than Indians [mean scores (non-Indians first) 56.7 v. 48.6, p<0.001] especially those in the non-exchanged group (58.4 v. 47.3, p<0.001) but not the exchanged group (54.8 v. 50.0, p<0.06). Being informed that reviews would be exchanged did not affect their quality (non-Indians: 54.8 exchanged v. 58.4 non-exchanged and Indian: 50.0 exchanged v. 47.3 non-exchanged; Table III).

Figure 2 shows the scoring by two editors [editor 1: mean (SD)=54.08 (20.83) and editor 2: mean (SD)=52.24 (16.95)] on the review quality using the Spearman’s analysis. These matched well (r=0.59, p<0.001). The editors published 22 papers from the exchanged group and 27 from the non-exchanged group and rejected 13 each from the exchanged and non-exchanged groups. Three manuscripts sent out for revision were never returned by the authors.

The time taken by all the four groups (exchanged Indian and non-Indian; non-exchanged, Indian and non-Indian) to return 78
Table II. Grading pattern of manuscripts by the reviewers according to the manuscript evaluation proforma

<table>
<thead>
<tr>
<th>Comment</th>
<th>Exchanged (n=38)</th>
<th>Non-exchanged (n=40)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Indian</td>
<td>Non-Indian</td>
</tr>
<tr>
<td>Accept</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Minor revision</td>
<td>8</td>
<td>21</td>
</tr>
<tr>
<td>Major revision</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Reject</td>
<td>15</td>
<td>6</td>
</tr>
</tbody>
</table>

Table III. Mean (SD) scores obtained by Indian and non-Indian reviewers

<table>
<thead>
<tr>
<th>Group</th>
<th>Indian</th>
<th>Non-Indian</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exchanged (n=38)</td>
<td>50.00 (19.21)</td>
<td>54.83 (20.73)</td>
<td>ns</td>
</tr>
<tr>
<td>Non-exchanged (n=40)</td>
<td>47.28 (18.72)</td>
<td>58.43 (16.79)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Overall (n=78)</td>
<td>48.60 (18.94)</td>
<td>56.67 (18.84)</td>
<td>ns</td>
</tr>
</tbody>
</table>

Table IV. Comparison of the time taken by the four groups of reviewers to reply

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Mean time (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indian non-exchanged</td>
<td>40</td>
<td>83.3</td>
</tr>
<tr>
<td>Non-Indian non-exchanged</td>
<td>40</td>
<td>70.0</td>
</tr>
<tr>
<td>Indian exchanged</td>
<td>38</td>
<td>81.7</td>
</tr>
<tr>
<td>Non-Indian exchanged</td>
<td>38</td>
<td>79.3</td>
</tr>
</tbody>
</table>

papers was similar (Table IV; p=0.5641, using the Kruskal-Wallis Test), although the time taken in postage was at least 8 days more for non-Indians.

DISCUSSION
A great deal has been written about peer review from western countries where studies have shown that the process generally improves the quality of manuscripts which are accepted for publication and the best reviews are provided by those who are young, belong to top academic institutions, have had advanced training in research and have been 'blinded' to the identity of the authors of the paper being assessed. In developing countries, the situation is very different and the choice of reviewers is limited. There is a paucity of good medical research because the attractions of clinical practice are stronger and research accomplishments are not suitably recognized. Thus, research performance has been generally poor and priorities in medicine lie elsewhere. Peer reviewers provide (usually anonymous) opinions on manuscripts at considerable expenditure of time and effort with very little reward except perhaps for the appearance of their names along with a large number of other reviewers, in the last issue of the journal for a particular year. It is, therefore, not surprising that Indian reviewers may not put in as much work into assessing a paper as their western counterparts and, because of the increased specialization of subjects, may also be less knowledgeable about the subjects under review. Yet, if India is to develop a strong scientific base in medicine especially relating to problems that are unique to our social environment, it is important to have a bank of good reviewers of manuscripts. We felt that the first step in achieving this was to find out what the actual ground realities of our peer review processes were.

At the NMJI, our standard practice is to send all original and review articles that we are considering for publication to an Indian as well as a non-Indian peer reviewer. We felt, therefore, that we would be in a good position to compare the quality of their reviews and also try and assess whether a simple intervention, i.e. telling the reviewers that their views would be exchanged, might encourage them to do a better job.

Our results suggest that Indian reviewers are not as good as their non-Indian, predominantly western counterparts and do not return the manuscripts that are sent to them faster although the mailing time is eight days less. In fact, the time our reviewers take to return a manuscript seems to be twice as long as those in the USA.

What is to be done? Many have suggested that peer reviewers should be given financial compensation for their efforts, free subscriptions to the journal and their work should be acknowledged when they are interviewed for selection or promotion. Idealism that 'the primary reward is in the contribution the reviewer makes to the research community' has little effect in this market-dominated era. Perhaps applicants for selection, promotion and research grants should state the titles of the papers they have reviewed for indexed journals and editors should send special letters of appreciation to all reviewers, thanking them for their efforts.

Although our results were disappointing, this is probably the first analytical study of peer review practices in a developing country where both Indian and non-Indian reviewers have been
compared, and we feel that we have provided data that were not
previously available. We tried to address two important research
questions: does exchanging reviews among two external review-
ners improve their performance; and do reviewers outside India do
a better job than those in India? These may provide a base for
assessing other ways of improving the peer review process in the
Third World with, we hope, more gratifying results.

Till then, we suggest that Indian editors should make use of
more non-Indian reviewers to obtain better reviews without
losing time. They should also initiate training programmes in peer
reviewing.

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World Association of Medical Editors (WAME)

The Executive Board of the World Association of Medical Editors views with dismay the forced
departure of the Editor-in-Chief of the New England Journal of Medicine over an issue that directly
threatens the quality and independence of the journal. We also protest in the strongest terms against
the process of his removal, which bypassed the journal’s Publications Committee. We strongly urge
the Massachusetts Medical Society to review its relations with its Editor-in-Chief and to establish
mechanisms for the future that will protect his or her editorial integrity.

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