

## Original Article

## Factors Influencing Editors' Decision on Acceptance or Rejection of Manuscripts: The Authors' Perspective

Behnam Shakiba MD<sup>\*</sup>, Hojjat Salmasian<sup>\*</sup>, Reza Yousefi-Nooraie MD<sup>\*</sup>,  
Mersedeh Rohanizadegan<sup>\*</sup>

**Background:** There are few reports in the scientific literature on the factors taken into account by editors in deciding to accept or reject a scientific paper. The purpose of the present study was to investigate the effects of different factors on the journal editors' decisions on whether to accept or reject the manuscripts submitted to their journals.

**Methods:** We randomly selected the participants from the authors of original articles and case reports published in six medical journals, and sent them a questionnaire by e-mail. We analyzed the scores they gave to each of the 17 items of the questionnaire.

**Results:** One hundred and nineteen of the authors responded to our survey. The scores given by the respondents were analyzed comparing authors of developing and developed countries. Also, the results from authors of high- impact journals were compared with those with a low-impact factor. Multidimensional scaling was used to categorize the items based on their average scores. Highest scores were given to items addressing the quality of study performance, those addressing manuscript writing, and to the role of statistical significance of the results in the probability of studies getting published.

**Conclusion:** Authors still believe in the existence of publication bias. They estimate its role to be comparable with the role of the quality of study performance and reporting. Our study also proves the presence of developing country bias, from the authors' perspective.

*Archives of Iranian Medicine, Volume 11, Number 3, 2008: 257 – 262.*

**Keywords:** Developing countries • journal article • manuscripts • publishing • publication bias

### Introduction

Editors of medical journals receive numerous manuscripts that require peer review to decide their appropriateness for publication. There are few reports in the scientific literature on the factors taken into account by editors in deciding to accept or reject a scientific paper.<sup>1</sup> Some studies reported that editors published articles based on various factors, including originality of the research, clinical importance and usefulness of the findings, metho-

dological quality, and readership interest of the journal.<sup>2-4</sup> Another study concluded that the selection of manuscripts for publishing was a difficult and biased process.<sup>5</sup> Some researchers believe that editors decide on manuscripts based on some characteristics other than quality indicators of manuscripts.<sup>6</sup> In another study, we concluded that “developing country bias” should be intentionally stated as an independent factor, which could contribute to biased inclusion of research manuscripts for publication.<sup>7</sup>

The purpose of the present study was to investigate the effects of different factors on journal editors' decisions on whether to accept or reject the manuscripts submitted to their journals, both from authors' and editors' perspectives.

### Materials and Methods

We started with a 21-item questionnaire based

**Authors' affiliation:** <sup>\*</sup>Students' Scientific Research Center, Tehran University of Medical Sciences, Tehran, Iran.

**•Corresponding author and reprints:** Behnam Shakiba MD, Students' Scientific Research Center, Third Floor, Faculty of Medicine, Tehran University of Medical Sciences, Poursina St., 14155-6537 Tehran, Iran.

Tel: +98-216-649-5948, Fax: +98-216-649-5948,

E-mail: b\_shakiba@razi.tums.ac.ir

Accepted for publication: 11 July 2007

on the results of an extensive literature searching and sent it to five researchers (three of whom were native English speakers). The revised questionnaire was designed and tested in a pilot study by a sample collection comprised of 15 authors and editors. The revised questionnaire included general questions about the respondent and a set of 17 items that could be scored from one to ten, which represented very-low and very-high importance of each of the factors on editors' decision, respectively. Based on the results of the pilot study, minor changes were made to the content and format of the questionnaire. We extracted a second version of this questionnaire differing in the wording of items and some general questions, to be sent to the editors.

We developed a list of the original articles and case reports published in six medical journals between 1 January 2005 and 1 January 2006. We categorized the journals to two groups. "lower-impact" group consisted of two Asian English journals with impact factors less than 1 (Indian Journal of Medical Sciences, Saudi Medical Journal), and two English language European journals with impact factors less than 1 (Scottish Medical Journal and Post-Graduate Medical Journal). The "higher-impact" group consisted of two general medical journals with high- impact factors [British Medical Journal and Journal of American Medical Association (JAMA)]. All the six journals are general medical journals published in English and indexed in Medline. Journals' impact factors were obtained from the 2005 edition of the Science Citation Index Journal Citation Reports.

We e-mailed the questionnaires with a covering letter explaining the aims of the study to a random list of corresponding authors of the articles, and a list of editors and editorial boards of the journals (100 authors from each group excluding authors whose e-mail addresses were unavailable, 300 authors in total were selected excluding authors whose e-mail addresses were unavailable). The respondents were informed that their contributions would remain confidential. A follow-up e-mail was sent after three weeks. We compared the scores with *t*-test and examined the coordination of them with multidimensional scaling.

## Results

Of the authors contacted, 40% (119/300) agreed to take part in the study. The characteristics of the

119 respondents are given in Table 1. Most of the respondents were European and Asian. About 70% of them were primarily clinicians. The number of their published articles cited in Institute for Scientific Information (ISI), Medline, or Excerpta Medica (EMBASE) varied from one to 300 (43±63) as reported by the respondents.

Table 2 represents the means (SDs) of the scores given by the respondents and the percentage of respondents who scored 7 or more to each item. Participants believed that, "appropriate and comprehensive study design", "good quality of manuscript writing", "useful and practical implications of study conclusions", "statistical significance of the results", and "the study sample size" were five most important factors affecting the journal editors' decisions on whether to accept an article to be published.

Table 3 shows the items received the score 7 or more by 70% or more of the respondents in each group. Three most important factors are the same in both groups.

The results of comparison between higher- and lower-impact journal groups are shown in Table 4.

**Table 1.** The characteristics of the authors who agreed to take part in the study.

<b>Sex (female)</b>		29%(35)
<b>Country group (developing)</b>		41%(49)
<b>Location</b>	Africa	0.8%(1)
	Australia	0.8%(1)
	Europe	42%(50)
	North America	18%(22)
	Asia	38%(45)
<b>Nationality (categorized by continent)</b>	Africa	0.8%(1)
	Australia	0.8%(1)
	Europe	45%(53)
	North America	17%(20)
	Asia	37%(44)
<b>Specialty</b>	Clinical practice	69%(82)
	Health and epidemiology	19%(23)
	Basic sciences	12%(14)
<b>Editor of any journals(yes)</b>		19%(23)
<b>Average number of articles in ISI, Medline, or EMBASE(SD)</b>		43(63)
<b>Fluency in English (yes)</b>		93%(111)

**Table 2.** The means (SDs) of importance scores and the percentages of respondents gave scores 7 or more to each item.

	Mean (SD)	Percent $\geq$ 7
Whether the authors have closely followed the 'Instructions to Authors', such as instructions regarding reference style	7(3)	57
Whether the study has performed a thoughtful, focused, up-to-date review of the literature	7(2)	66
The nationality of authors	3(3)	11
Gender of contact author	2(1)	2
The statistical significance of the results	7(2)	71
Whether the limitations of the study were taken into account in interpretation of results	7(2)	66
Whether the authors have chosen reviewers for the article, or the reviewers must be chosen by the editors	4(2)	16
The study sample size	7(2)	67
The affiliation of authors	5(2)	24
Whether the study has an appropriate, rigorous, and comprehensive design	8(2)	90
The scientific qualifications of authors	5(2)	35
Whether the manuscript is well-written (i.e., it is clear, straightforward, and easy to follow)	8(1)	86
Number of previous articles published by the corresponding author in journals indexed in ISI, MEDLINE, or EMBASE	4(2)	21
Whether the authors have previously published articles in that journal	4(2)	18
Whether there was a novel or unique approach for the interpretation of the results	6(2)	54
Whether the conclusions include practical, useful implications	8(2)	84
Number of articles from that journal cited by the manuscript	4(2)	14

Authors of higher-impact journals group gave significantly lower scores to the items "Whether the authors have closely followed the 'Instructions to Authors'...", "Whether the study has performed a thoughtful, focused, up-to-date review of the

literature", "The nationality of authors", "Whether the authors have chosen reviewers for the article...", "Number of previous articles published by the corresponding author in journals...", "Whether the authors have previously published articles in that journal", and "Number of articles from that journal cited by the manuscript".

**Table 3.** Items received the score 7 or more by 70% or more of the respondents in each journal group.

Higher-impact group	Percent $\geq$ 7
Whether the study has an appropriate, rigorous, and comprehensive design	92
Whether the manuscript is well-written (i.e., it is clear, straightforward, and easy to follow)	83
Whether the conclusions include practical, useful implications	83
The statistical significance of the results	72
Whether the limitations of the study were taken into account in interpretation of results	72
The study sample size	70
Lower-impact group	
Whether the study has an appropriate, rigorous, and comprehensive design	89
Whether the manuscript is well-written (i.e., it is clear, straightforward, and easy to follow)	88
Whether the conclusions include practical, useful implications	85
Whether the study has performed a thoughtful, focused, up-to-date review of the literature	75
The statistical significance of the results	71

We compared the scores given by the authors from developing and developed countries based on their country of affiliation. Only one item, "The nationality of authors", had more than two scores difference between the two groups (mean score in 'developed group' minus mean score in 'developing group' was -2.2,  $P < 0.0001$ ). We defined developing country group as residents of countries of the Organization for Economic Cooperation and Development (OECD).<sup>8</sup>

Only five of the editors and editorial board members completed the questionnaires and the data obtained from this group could not be analyzed. Some excuses for not participating in the study were "Thanks for thinking of me as an appropriate source of opinion about this topic. Unfortunately, I cannot complete the survey at this time", "I cannot complete the surveys of this type", "What is your policy on nuclear proliferation?", and "We have gotten a number of surveys of this type and after meeting with my associate editors we have decided not to participate in them. Our

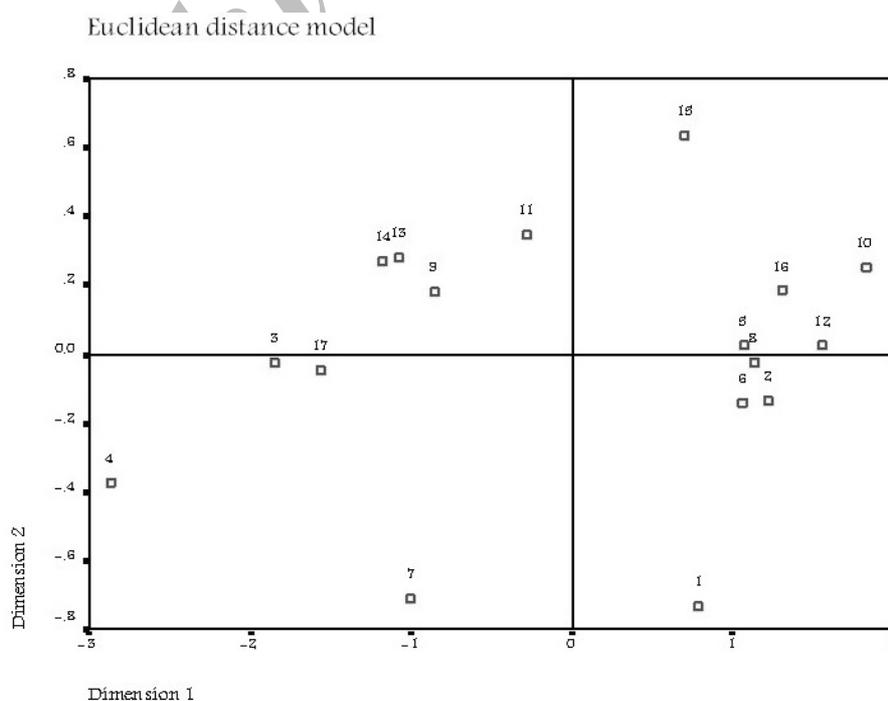
**Table 4.** Comparison between the scores given by higher- and lower- impact group members.

	Mean difference	P value
Whether the authors have closely followed the 'Instructions to Authors', such as instructions regarding reference style	-1.23	0.009*
Whether the study has performed a thoughtful, focused, up-to-date review of the literature	-1.44	<0.0001*
The nationality of authors	-1.34	0.004*
Gender of contact author	-0.06	0.8
The statistical significance of the results	0.27	0.5
Whether the limitations of the study were taken into account in interpretation of results	0.52	0.13
Whether the authors have chosen reviewers for the article, or the reviewers must be chosen by the editors	-1.38	0.002*
The study sample size	0.18	0.6
The affiliation of authors	-0.59	0.2
Whether the study has an appropriate, rigorous, and comprehensive design	0.11	0.7
The scientific qualifications of authors	-0.54	0.2
Whether the manuscript is well-written (i.e., it is clear, straightforward, and easy to follow)	-0.26	0.3
Number of previous articles published by the corresponding author in journals indexed in ISI, MEDLINE, or EMBASE	-1.18	0.007*
Whether the authors have previously published articles in that journal	-0.87	0.05*
Whether there was a novel or unique approach for the interpretation of the results	-0.55	0.2
Whether the conclusions include practical, useful implications	-0.27	0.4
Number of articles from that journal cited by the manuscript	-1.53	0.001*

criteria for acceptance are clearly spelled out in our Instructions to Authors. The survey submitted is subjective and easily misinterpreted”.

Using multidimensional scaling method, different factors were distributed in a two-

dimensional map according to their similarities (Figure 1). We divided them to six clusters, which appropriately described the pattern found in the point map and meanwhile were meaningful. Then we assigned the clusters to the labels, and calcul-

**Figure 1.** Point map derived from the multidimensional scaling process.

**Table 5.** The clusters of factors and their mean (SD) scores.

<b>Study performance 7.7(1.6)</b>	
8	The study sample size
10	Whether the study has an appropriate, rigorous, and comprehensive design
<b>Statistical significance 7.2(1.9)</b>	
5	The statistical significance of the results
<b>Manuscript writing 7.1(1.3)</b>	
1	Whether the authors have closely followed the 'Instructions to Authors', such as instructions regarding reference style
2	Whether the study has performed a thoughtful, focused, up-to-date review of the literature
6	Whether the limitations of the study were taken into account in interpretation of results
12	Whether the manuscript is well-written (i.e., it is clear, straightforward, and easy to follow)
15	Whether there was a novel or unique approach for the interpretation of the results
16	Whether the conclusions include practical, useful implications
<b>Authors' scientific history 4.6(1.9)</b>	
9	The affiliation of authors
11	The scientific qualifications of authors
13	Number of previous articles published by the corresponding author in journals indexed in ISI, MEDLINE, or EMBASE
14	Whether the authors have previously published articles in that journal
<b>Journal self citation 3.6(2.4)</b>	
17	Number of articles from that journal cited by the manuscript
<b>Authors' demographics 2.4(1.6)</b>	
3	The nationality of authors
4	Gender of contact author

ated the average scores for each cluster (Table 5). The most important were the clusters of the items addressing study performance, statistical significance, and manuscript writing characteristics.

## Discussion

In present study, the authors believed that "appropriate and comprehensive study design", "good quality of manuscript writing", "useful and practical implications of study conclusions", "statistical significance of the results", and "study sample size" were the most important factors affecting the journal editors' decisions on whether to accept an article to be published. This finding is consistent with the findings of some other studies.<sup>2-4</sup>

The results of the present report are interesting

in some aspects: Firstly, the authors had a high level of agreement upon the high impact of statistical significance on the chance of the report to be published. This represents their beliefs in the existence of publication bias. Publication bias is defined as "the tendency to publish research results based on the strength and direction of findings".<sup>9</sup> It is well-documented that studies with non-significant or negative results are substantially less likely to be submitted for publication.<sup>5, 10</sup> Several facets may lead to publication bias; one of these factors is researchers' decision on whether or not to submit their manuscripts.<sup>11</sup> Researchers submit significantly positive studies up to 10 times more than nonsignificant results.<sup>12</sup> The main reason for nonsubmission of negative results is lack of interest by the researchers because they think that editors and reviewers are biased against negative studies, considering them to be of lesser interest.<sup>13, 14</sup> The results of multidimensional scaling prove that the impact of statistical significance is comparable with different aspects of the quality of performance of the study and the writing of the manuscript.

The second interesting aspect of our study is that the impact of the "nationality of authors" differed significantly between the authors from developing and developed countries, depicting that researchers from less-developed countries believe that editors and reviewers are biased against their nationality.<sup>6</sup>

The third interesting feature of our study is the authors' opinion about the impact of "the number of articles from the target journal cited by the manuscript". This item had more scores in "lower-impact group" than "higher- impact group", which may explain that authors of "lower- impact group" consider that editors of some journals attempt to increase their journals' impact factor by self citations.<sup>15, 16</sup>

Fourthly, response rates for the editors and editorial board members groups were low, and the data obtained from these groups could not be analyzed. The low- response rate could be due to the numerous similar questionnaires the editors receive (one of the editors of JAMA claimed the editors of that journal had agreed not to reply to such questionnaires), and that their primary (active) e-mail addresses were unavailable (especially for the editors of low-Asian journals.)

This study has a number of limitations that must be acknowledged. Firstly, a self-completion questionnaire is not the best way to gather the

information about such a complex subject. Secondly, the study had a low-response rate (40%) and unfortunately we could not compare responders and nonresponders based on demographics and number of published studies. Thirdly, we could not gather the editors' opinion about the factors they consider most important in accepting or rejecting the manuscripts submitted to their journals.

We conclude that authors believed that methodological quality and good writing were the most important factors affecting the acceptance of their reports for publication, while they thought some characteristics other than quality of manuscripts could affect editors' decision on acceptance or rejection of manuscript.

We suggest that the journal editors should clarify the process of acceptance of submitted reports, and employ methods to reduce and prevent bias in this process. This might reduce authors' concerns about biased evaluation of their submitted reports.

### Acknowledgment

We wish to thank Dr. Rob Herbert for his valuable comments on designing this study. We also thank Dr. Shahin Akhondzadeh, Dr. Jon Deeks, Dr. Akbar Soltani, Dr. Alex J Sutton, and Dr. Norma Terrin for their valuable comments on the questionnaire. We gratefully acknowledge Dr. Justin Stebbing, for his valuable comments on designing this study. The present study has been supported by Tehran University of Medical Sciences.

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