

Reviewing a Manuscript: Disparity Amongst Peer Reviewers' Priorities from Basic Health Sciences and Clinicians

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ABSTRACT

Objective: To determine the disparities and the priorities of basic health scientists and clinicians while assessing a manuscript.

Study Design: Cross-sectional study.

Place and Duration of Study: The study was conducted at Karachi, from January to April 2014.

Methodology: The study was a proforma-based research, employed convenient sampling for data collection, in which 100 reviewers belonging to clinical and basic health science background were selected. The questionnaire used was a self-administered one with close-ended questions. The results were analysed using SPSS software.

Results: Out of 100 respondents, 50 were from Basic Health Sciences Reviewers (BRs) and 50 Clinicians Reviewers (CRs). The results depicted grammatical and improper referencing amongst formatting mistakes as the most common observation by the reviewers. The reviewers also raised concerns regarding validity of statistical analysis, use of outdated references and lack of acknowledgment of the sources of funding utilised by the authors. There were elements of manuscripts that BRs and CRs reviewers agreed upon and prioritised, but there were elements of the manuscript that they approached mostly in methods, results and conclusion components.

Conclusion: The priorities of reviewers from Basic Health Sciences and Clinical background differed markedly in certain respects. This impacts how they review the manuscripts.

Key Words: *Medical research manuscript. Peer review. Biomedical research. Clinical research.*

INTRODUCTION

Scientific reviews have been actively employed in the field of behavioural sciences and medicine since the 1700s.¹ Peer review, the instrument for ensuring trustworthiness, grounds all scholarship.^{2,3} Quality control, undertaken by experts in the traditional peer review of manuscripts for scientific journals, is essential in most scientific disciplines in order to create valid and reliable knowledge.⁴ According to Lamont, peers monitor the flow of ideas through the various gates of the academic community,⁵ but journal peer review influences not only scholarship but legal decisions also.⁶

In recent years, the demand for the review of academic and scientific work has amplified many folds with the increase in the level of publications.² A similar trend has been observed in Pakistan as well, with the launch of many peer reviewed biomedical journals. A need has arisen for more expert peer reviewers to facilitate the publication process. Review of a manuscript requires considerable dedication and expertise in the field, and

there is limited availability of qualified and experienced reviewers'. These reviewers are the "gate-keepers of science" because they can influence the direction of scientific research.⁷ Therefore, there is a need to assess the standards and guidelines employed by the reviewers to conduct a manuscript review successfully.

In order to retain the quality of a scientific journal, it is important for an editorial team to have access to skilled and capable reviewers for reviewing their manuscripts for publishing. The level of time and skill dedicated by the reviewer towards reviewing a manuscript is directly proportional to the quality of the end result. Therefore, a considerable investment of effort and time by the reviewers leads to high quality publications.⁴ Generally, the reviewers are provided with a copy of the manuscript without any information about the authors to ensure objectivity.

There are three main types of reviews observed for a journal manuscript. These take the form of a technical review, a peer review and a statistical review, which employ these reviews as a fundamental part of their editorial process.

The objective of this study was to determine the different priorities employed by the reviewers from different disciplines, basic scientists compared to the clinicians, while reviewing a manuscript for publication.

METHODOLOGY

The study was a questionnaire-based research which employed convenient sampling for data collection. The

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Table I: Priority of the basic health sciences and clinician reviewers when assessing a manuscript.

	BRs N=50	CRs N=50
Abstract		
Complete word count	3 (6%)	8 (16%)
Sample selection	0 (0%)	4 (8%)
Results and conclusion	8 (16%)	12 (24%)
Methodology	0 (0%)	12 (24%)
Defined objective and comprehensive overview	44 (88%)	35 (70%)
Introduction		
Complete word Count	0 (0%)	4 (8%)
Description with background	44 (88%)	46 (92%)
Historical information	11 (22%)	4 (8%)
Formatted research objective and questions	6 (12%)	12 (24%)
Methodology		
Complete word count	0 (0%)	0 (0%)
Sample size, Inclusion and exclusion criteria	8 (16%)	8 (16%)
All elements of methodology explained	47 (94%)	38 (76%)
Data collection method	0 (0%)	12 (24%)
Detailed description of method to allow reproduction	4 (6%)	15 (30%)
Results		
Description of statistical calculations	8 (16%)	12 (24%)
Detailed	3 (6%)	4 (8%)
Identification of emerging trends with rationale	31 (62%)	23 (46%)
Accompany graphs and tables	22 (44%)	38 (76%)
Discussion		
Presentation of research findings in light of other research	36 (72%)	27 (54%)
Highlighted limitations of the study	14 (28%)	15 (30%)
Verbatim transcript of primary research	0 (0%)	4 (8%)
Focus on critical analysis of findings	25 (50%)	23 (46%)
Conclusion		
Limitations of the study	14 (28%)	8 (16%)
Restatement of findings with research question	38 (38%)	15 (30%)
Presentation of basics of the research	0 (0%)	0 (0%)
Presents synthesis of the study with proposed future applications	31 (62%)	35 (70%)

duration of the study was 4 months from January to April 2014, conducted at Karachi, in which 100 reviewers were surveyed. The respondents included were reviewers and members from the editorial boards of medical Journals in Karachi who had been reviewing manuscripts on a routine basis for the last 2 years. The targeted reviewers belonged to different backgrounds of basic health sciences and clinical practice. The clinicians and basic health sciences faculty, who were not actively involved in the manuscript review process and had never reviewed or had less than 2 years experience, were excluded. The respondents, after an informed consent, were explained about the objective of the research, and data was collected using a self-administered questionnaire. Close-ended questions were used along with Likert rating scale to record the responses of the respondents.

The results obtained were of qualitative in nature which were analyzed using SPSS version 19.0 software. The percentages were calculated for all descriptive values.

RESULTS

One hundred respondents were divided into two groups; 50 basic health science reviewers (BRs) and 50 clinicians' reviewers (CRs, Table I). Generally, the majority of the mistakes in a manuscript, observed by the reviewers, were grammatical and improper referencing amongst formatting. The reviewers also raised concerns regarding validity of statistical analysis, use of outdated references and lack of acknowledgment of the sources of funding utilized by the authors.

The results also described content out of scope and lack of cohesion in the study. While assessing the types of formatting mistakes pertaining to grammar and improper reference formatting, the results were highly noteworthy. Also remarkable were results for general non-compliance to instructions for authors, specifically for mistakes observed in tables, un-professional presentation of manuscripts, inappropriate defined objectives and comprehensive overview etc. (Table I).

DISCUSSION

This study highlights the discrepancy in the opinion of reviewers from clinical and basic sciences disciplines while appraising a manuscript. Different trends were observed in their priorities regarding various elements of manuscripts such as abstract, introduction, methods, results and discussion, during the review process. Worldwide, peer reviewing stands as the principal mechanism for quality control in most scientific disciplines. Therefore, any discrepancies observed in the reviewers' priorities may translate into the published articles with varying strengths. A number of studies describe the primary roles of the reviewer as to serve as a "consultant" to the Action Editor, and provide feedback to authors about ways to improve the science and the communication of that science.⁸ Here, the researchers found that referee-like behaviour drastically affects peer review; and an equal distribution of the reviewing effort is beneficial only, if the scientific community is homogeneous and referee-reliability is the rule.⁹

Previous studies regarding the role of the peer reviewers offered opinion of the strengths and weaknesses of a manuscript; but not its entertainability for publication, because the opinions of the peer reviewers on the quality can differ. Reviewers have the opportunity to comment on the perceived quality of the manuscript by providing a rating (i.e., reject, invite major revisions, invite minor revisions, accept) from a drop-down menu when they submit the review; and by making confidential comments to the editor that are not communicated to authors. Because peer review is so central to what is published and funded, and because there are so much hinges on peer review in and outside of science, it is essential that it be carried professionally and proficiently.¹⁰ The research on peer review, which in recent years has addressed criticisms of the process, deals for the most part with journal peer review,¹¹⁻¹⁵ and somewhat less frequently with peer review for fellowship and grant proposals.¹⁶⁻¹⁸

The trend explored in this study revealed an interesting disparity between the priorities of the reviewers having a basic health sciences (BRs) background *versus* clinical background (CRs) while reviewing different sections. In the abstract section, 88% (44/50) of BRs primarily want the objectives of the study to be defined clearly. They also emphasized that the abstract should be a comprehensive overview of the manuscript where the results and conclusions are explicitly presented. Whereas, the CRs, in addition to these, preferred compliance to the methodology and word count limits as well. Abstracts are the mirrors of the original work and are the most read out of the whole article. Earlier studies have also highlighted that general defects are very frequent in abstracts and these occur so commonly that even specific instructions to authors is totally ineffective in lowering this rate.¹⁹

While reviewing an introduction of a manuscript, the BRs (88%) seek a description for the background of the subject being researched and its historical information. The CRs have similar priorities as well (92%), but they also emphasize on the presence of smart objectives in the introduction. Ezeala *et al.* observed that 66.7% (28/42) of the manuscripts had flaws in the introduction.²⁰

Regarding methodology, although both CRs and BRs, strongly emphasised on the detailed description of methodology; but, CRs specifically focused more on reproducibility element and data collection. As noted by the authors of American Educational Research Association (AERA, 2006), "Reporting that takes these principles into account permits scholars to understand one another's work, prepares that work for public scrutiny, and enables others to use that work".²¹

Interestingly, CRs (76%) stressed more on the presence of tables and figures compared to BRs (44%) in the results section. This explains the time restraints and gap limitation associated with clinicians to fit in manuscript review. Tables and figures give an overview of the findings without going through the details in the running text. Many reviewers, unfortunately, merely summarise the author's findings reported in the results along with their interpretation. They do not appraise by placing them within the context of the remainder of the work such as conceptual framework, theoretical framework, sample size, sampling scheme, analysis techniques used etc.²²

The instructions to authors of all journals emphasise that discussion should be based with reference to previous work. Both BRs and CRs absolutely agreed with it and also preferred focus on critical analysis of the research findings. Limitations of the study, while concluding, were highly advocated by BRs compared to CRs. They were in agreement on rest of the content for the conclusion.

CONCLUSION

A considerable difference was observed between the priorities of the CRs and BRs. Practice and specialisation tend to affect the approach taken towards reviewing the manuscript. It is proposed that more elaborative universal standards should be designed for reviewing manuscripts that can provide structured guidelines to maintain uniformity and reduce discrepancy of attitudes between reviewers from diverse backgrounds.

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