

DEFICIENCIES IN ORIGINAL ARTICLES ACCEPTED FOR PUBLICATION IN PAKISTAN JOURNAL OF MEDICAL SCIENCES: A RETROSPECTIVE ANALYSIS

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ABSTRACT

Objective: To analyze the deficiencies in original articles accepted for publication in Pakistan Journal of Medical Sciences (PJMS).

Methodology: All the original articles submitted to PJMS during April 2005 to March 2008 which were finally accepted for publication after peer review, were retrospectively analyzed for deficiencies. Main outcome measures were number and type of deficiencies with mean assessment score. The assessment score was based on the overall impression about the quality of the paper keeping in view the quantum of deficiencies. Manuscripts which had just problems with references or latest references were missing got six or seven points out of ten while those manuscripts with more deficiencies were considered average and got five points. The results were expressed as the mean score of deficiencies. This analysis did not include the manuscripts rejected during in-house review or after peer review and thus were not accepted for publication.

Results: Three hundred and forty two original articles accepted for publication were analyzed. Out of these 156 (45.6%) were primary acceptance, 67 (19.6%) were accepted after one revision and 119 (34.8%) after more than one revision. Mean number of authors was 2.99 ± 1.62 . Mean acceptance time was 4.88 ± 2.21 months and mean publication time was 9.29 ± 2.82 months. Mean score of deficiencies was 6.62 ± 3.73 . Most common deficiencies were: inappropriate Vancouver format of references in 259 (75.7%), extensive grammatical mistakes in 248 (72.5%), lack of recent references in 231 (67.5%) and un-necessary tables and figures in 152 (44.4%). The mean assessment score was 6.58 ± 1.08 (Range 1-10) one=worst, 10= excellent.

Conclusion: Major deficiencies in the manuscripts accepted for publication in PJMS were inappropriate references, extensive grammar mistakes, lack of recent references besides un-necessary tables and figures. These can be rectified by the authors themselves provided they critically review their manuscripts and they may also require specific training for preparation of final manuscript before submission for publication.

Key words: Peer Review, Deficiencies, original manuscripts, training of authors.

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INTRODUCTION

The subject of medical writing and research methodology is not included in the undergraduate medical curriculum in many developing countries though some institutions have now taken some steps in this direction. Hence, medical writing is an academic activity not enjoyed by a vast majority of the clinicians. However, in the changed circumstances where

published work is a pre-requisite and important for selection, appointment and further promotions in academics, the clinicians are forced to conduct studies and write under compulsion with the result that the quality of their work and manuscripts is not so good.¹ Even after having conducted a study, many clinicians find it extremely difficult to write and prepare the manuscript which can be accepted for publication in the peer reviewed medical journals. That is why most of the manuscripts by clinicians in the beginning of their career have numerous deficiencies,² face lot of trauma during the review process and often they have to revise at time more than once, rewrite and resubmit their manuscripts thereby prolonging the review process and eventual publication time.

Pakistan Journal of Medical Sciences is a general peer reviewed medical journal which attracts over three hundred manuscripts by authors from over three dozen countries annually. During the Year 2008 the number of manuscripts received crossed the figure of four hundred and we received four hundred twenty four manuscripts. We practice an open peer review system. In the first phase almost over 35% of the manuscripts which have serious deficiencies regarding format of the manuscript, study design and other serious drawbacks are rejected during the initial review and the authors are asked to revise, rewrite and resubmit their manuscripts. Then there is an in-house review and those manuscripts which are found of good quality are categorized into A, B and C and sent for peer review. We maintain a reviewers data base which has One hundred forty nine (149) reviewers from Pakistan and overseas and this is constantly updated with additions and deletions based on the performance of the reviewers who all do this job in honorary capacity. We also request our reviewers to give an overall assessment about the quality of the manuscript as below standard, average, satisfactory, good and very good besides recommending immediate, early or routine publication. Those manuscripts which fall into A category are processed on fast track. No

manuscript is rejected unless it receives adverse comments by at least two reviewers. A vast majority of our reviewers still need printed copies while about 30% of the reviewers most of whom are from overseas review the manuscripts sent to them online which is not only fast, economical but also significantly reduces the processing time.

The objective of this study was to find out the deficiencies in the manuscripts accepted for publication in the Pakistan Journal of Medical Sciences and suggest measures for the authors how to minimize these deficiencies.

METHODOLOGY

It is a retrospective analytical study of 342 manuscripts accepted for publication in Pakistan Journal of Medical Sciences from April 2005 to March 2008. The details regarding deficiencies were extracted from the Reviewers Proforma and by looking at the edited manuscripts. For extracting this data a forty item proforma was prepared which included potential list of deficiencies and the information was extracted by the principal author. The main outcome measures documented included the number and type of deficiencies and mean assessment score. The assessment score was based on the overall impression about the quality of the manuscript keeping in view the quantum of deficiencies. Manuscripts which had just problems with references or latest references were missing got six or seven points out of ten while those manuscripts with more deficiencies were considered average and got five points or less. Those papers which had the least deficiency or no deficiency at all and got smooth sailing during editing were considered as excellent and they received eight to nine points out of ten. The results were expressed as the mean score of deficiencies This analysis did not include those manuscripts which were rejected either on initial review or during in-house review as well as those rejected after peer review process.

The data was analyzed using SPSS version 10 using frequencies and percentages.

RESULTS

Of these three hundred forty two manuscripts one hundred fifty six (45.6%) were primary acceptance which means they were accepted with minor corrections carried during editing. Sixty seven (19.6%) were accepted after one revision by the authors who were conveyed the reviewers comments. They re-wrote, revised and resubmitted their manuscripts incorporating the reviewer's comments and suggestions. The remaining one hundred nineteen (34.8%) of the manuscripts were accepted for

publication after more than one revision by the authors.

Mean number of authors in these manuscripts was 2.99 ± 1.62 . Mean acceptance time was 4.88 ± 2.21 months and the mean publication time from receipt of manuscripts was 6.62 ± 3.73 months.

The most important and major deficiencies were inappropriate Vancouver format of references in two hundred fifty nine (75.7%) of manuscripts, extensive grammatical mistakes were found in two hundred forty eight (72.5%) manuscripts. In two hundred

Table-I: Details about various deficiencies (n=342)

S No.	Deficiency	n	%
1.	References not in Vancouver style	259	75.7
2.	Grammar mistakes	248	72.5
3.	Lack of recent, local and international references	231	67.5
4.	Un-necessary and irrelevant references	211	61.7
5.	Manuscript inadequately referenced	190	55.6
6.	Limitations of study not explained	176	51.5
7.	Un-necessary tables and figures	152	44.4
8.	Unclear presentation of Tables / Figures	123	36.0
9.	Repetition of results (text and tables)	115	33.6
10.	Too lengthy or too short text	35	10.2
11.	Writing not concise and clear	34	9.9
12.	Inappropriate length of Methodology	32	9.4
13.	Number, percentage in text and table/figures not correct	27	7.9
14.	Inappropriate length of Discussion	24	7.0
15.	Provided inadequate details	17	5.0
16.	Inadequate statistical analysis	14	4.1
17.	Relevant and important end-points not measured	13	3.8
18.	Required rewriting	13	3.8
19.	Fails to convey the message clearly	12	3.5
20.	Study design not described adequately	12	3.5
21.	Discussion is not coherent	12	3.5
22.	Outcomes not described adequately	9	2.6
23.	Objectives of study not described properly	8	2.3
24.	Does not add anything new to knowledge	7	2.0
25.	Rational of study not adequately addressed	7	2.0
26.	Not properly structured	6	1.8
27.	Intellectual arguments about results lacking	5	1.5
28.	Findings not properly compared with others findings	5	1.5
29.	Inadequate conclusion	5	1.5
30.	Conclusions does not match with study objective	5	1.5
31.	Statistical tests not properly described	4	1.2
32.	Results not presented clearly	4	1.2
33.	Important findings of results not highlighted	4	1.2
34.	Research questions raised by study not described adequately	4	1.2
35.	References in text not cited in correct numerical order	4	1.2

thirty one (67.5%) manuscripts, latest references were missing while in one hundred fifty two manuscripts all the references listed at the end were not cited. Some of the authors could not differentiate between how to write references from books.

Limitations of the study were not mentioned in 51.5% manuscripts, while un-necessary tables/figures were included in 44.4%. In 33.6%, there were repetitions in results (both text and table). All the major deficiencies with frequency and percentage is shown in Table-I. The mean assessment score of deficiencies was 6.58 ± 1.08 (Range 1-10) one=worse, 10=excellent. Other deficiencies which accounted for less than one percent included study not helpful for readers who were new to the subject, methodology was not clearly described or findings were not clinically, socially significant.

DISCUSSION

The major deficiencies which were found in this study included inappropriate and incorrect references, extensive grammar mistakes, and lack of recent references after proper literature search besides un-necessary tables and figures. Though similar studies have been conducted overseas³ but this is the first study based on audit and review of deficiencies of manuscripts accepted for publication by a Pakistani biomedical peer review journal. A study conducted in Pakistan by Midrar Ullah and colleagues just looked at the accuracy of references in manuscripts selected for publication but it did not look at the overall deficiencies which were documented in our study.⁴ Their study consisted of just twenty manuscripts with 288 references published in one issue of Pakistan Armed Forces Medical Journal. They found that seventy out of 288 references (24.3%) had no mistake while the rest of the references had errors ranging from one to more than six.

It is extremely difficult for the editors, reviewers and the editorial staff to check each and every reference. In fact as per International

Committee of Medical Journal Editors guidelines, it is the primary responsibility of the authors to ensure accuracy in references. (www.icmje.org) Some of the mistakes made by the authors as regards references are that either they give a new number while repeating the same reference or all the references listed in the end are not cited in the manuscript or vice versa. Perhaps most important mistake committed by the authors is that they fail to cite the references in order as per ICMJE guidelines i.e. 1,2,3,4 and so on. Some authors do not bother to do proper literature search, hence the latest references are lacking. These are some of the deficiencies as regards references in our study which are similar to the study by Midrar Ullah and colleagues.⁴ Inclusion of a qualified and experienced librarian in the Editorial Board can help minimize these errors in references but this is a luxury which many biomedical journals published from developing countries including Pakistan cannot afford at the moment.^{5,6} END NOTE software is also available which helps in correcting references but it is not freely available and not many authors know how to use it.

Taylor and colleagues in their study³ analyzed design and manuscript deficiencies in research articles submitted to Emergency Medicine. This study is different from our study as they included all the manuscript which was submitted for publication including those which were later on rejected. Their analysis included fifty seven manuscripts of which 28 were accepted for publication, nineteen rejected and ten were referred for revision. They used a Performa containing sixty nine items for extraction of information regarding deficiencies. Their mean deficiency score was 18.1 ± 6.9 , 16.4 ± 6.5 and 18.4 ± 6.7 for all articles as compared to mean deficiency score of 6.62 ± 3.73 (based on sixty nine item Performa). The reason for difference between the mean deficiency score in both the studies is because we did not include the manuscripts which were rejected and secondly the number of manuscripts in our study were much more (342) as compared to their study (57) besides

the difference in the number of items used to extract the data regarding deficiencies. They had looked at 69 items as compared to forty in our study. Common deficiencies which they have documented include ambiguity of the methods (77%) and results (68%), conclusions not warranted by the data (72%), poor referencing (56%), inadequate study design description (51%), unclear tables (49%), un-necessary long discussion (49%), while limitations of the study were not described in 51% of the manuscripts. Inadequate definition of terms used and subject selection bias accounted for 49% and 40% respectively.³ Yet another difference in both these studies is that since we had not included the manuscripts which were rejected, these major deficiencies like ambiguity in methodology, results and irrelevant discussion did not figure in our analysis.

Many of the manuscripts which were eventually accepted for publication in Pak J Med Sci after one or more than one revision had numerous deficiencies when they were first submitted. These deficiencies were removed and corrections made by the authors during revision in the light of the reviewers comments and suggestions. Hence, these deficiencies were also not taken into account in the final analysis in our study which means that the actual number and mean assessment, deficiency score might have been much higher than being reported. Although the deficiencies documented in our study was broad based but one of the deficiency found was the preparation of the manuscript for submission. This highlights the importance of the fact that the authors need to be educated and trained in this process as well. This fact has also been highlighted by Gilhotra and McGhee in their series of manuscript on ophthalmology and Vision science research who feel that authors must carefully refine manuscripts before submission.⁷

Suggestions:

1. All medical institutions and professional specialty organizations must regularly organize workshops on research methodology and manuscript writing in their institutions and at their annual conferences.
2. As highlighted by other researchers as well, formal training in research methodology and manuscript preparation should be included in the workshops on the subject.
3. Research Methodology and Medical Writing should be included in the undergraduate medical curriculum.
4. The authors should be encouraged to carefully read instructions to authors in the latest issue or website of the journal in which they wish to submit their manuscript.
5. Study of Uniform requirements for submission of manuscripts to biomedical journals by the International Committee of Medical Journal Editors (www.icmje.org) freely accessible on the net will be extremely helpful for the potential authors.
6. Review of the Final Check List published by some of the journals by the authors before submission can also help minimize the deficiencies.
7. Postgraduate Certificates and Diploma available in some universities and online courses can also help the authors in preparing their manuscripts which will maximize their chances of acceptance for publication.

Deficiencies of the Study: Documenting the deficiencies in the manuscripts by carefully analyzing the reviewer's proforma and looking at each and every manuscript included in the study required lot of time. Although the details regarding deficiencies were extracted by the same principal author but still there is a possibility that some of the deficiencies might have been under reported. Secondly since the study included only those manuscripts which were eventually accepted for publication, those with major deficiencies in study design, statistical analysis or overall format of the manuscript which were rejected were not included, the mean number of deficiencies 6.62 ± 3.73 and mean assessment score of 6.58 ± 1.08 does not reflect the true picture as regards deficiencies in the manuscripts. This could be possible only if the manuscripts rejected either on initial review or after peer review were also included. When this study was planned, all the rejected manuscripts were not available hence it was

not possible to include them in the study. Yet another limitation of the study is that it was a subjective assessment rather than based on the weightage of each deficiency. The assignment of weightage to the deficiencies is perhaps the best way for assessment, however, there is no standardized weightage system available so far to the best of our knowledge.

Note: This paper was presented at the Fourth Eastern Mediterranean Medical Journals Conference held at Bahrain from November 4-7th 2008.

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