



A one day workshop on scientific writing: Brief report

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BRIEF REPORT

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Abstract

A one-day workshop on scientific writing was held at KIST Medical College, Lalitpur, Nepal on Saturday, 27th February 2010. Topics covered were 'Writing an original research article', 'Writing an abstract', 'Why articles are rejected – views from a reviewer', 'Tips for effective scientific writing', 'Writing a case report' and 'Journals where you can publish your work'. The various sections of an original research article are abstract, introduction, materials and methods, results, discussion, conclusion, acknowledgements, references and figures and tables. Let us now examine the first section of a paper, the abstract. An abstract can be regarded as an abbreviated and accurate representation of the paper contents. Abstracts can be unstructured, in IMRaD format (Introduction, Methods, Results and Discussion) or in an eight heading format. Key words help in indexing and retrieval.

Common reasons why articles are rejected are that they are sent to the wrong journal, the article does not follow the word limits of the journal or is not prepared in accordance with the journal instructions, errors with presentation, grammar and language, problems with the theoretical framework, references to appropriate literature are lacking or there are serious methodological flaws. A narrative structure should link together various parts of the paper. Sentences should be short, written in active voice and address one thought at a time. Unnecessary words should be deleted and short and simple words used instead of long and complicated ones. While writing an original article most authors start with the Methods section and then write the Results. Ensure that the article conforms to the journal's guidelines for authors. Plagiarism should be avoided and previous studies read, understood and then paraphrased in the writer's own words.

A case report, one of the forms of scientific writing is a carefully documented scientific observation useful for education, research, practice and self learning. The essential components of a case report are title, abstract, introduction, case presentation or description, discussion, conclusion and references.

Key Words

Abstract, Case report, Nepal, Original research article, Scientific writing

KIST Medical College, Lalitpur, Nepal organized a one-day workshop on getting research published in scientific journals on Saturday, 27th February 2010. The workshop used a combination of presentations and activity-based learning sessions to help the participants improve their scientific writing skills and their chances of getting papers published in scientific journals.

Forty-seven individuals from various institutions in Nepal participated. The institutions were Patan Academy of Health Sciences (PAHS), Kathmandu Medical College (KMC), Nepal Medical College (NMC), Asian College of Advanced Studies, National Institute of Science and Technology, Institute of Medicine, KIST Medical College (KISTMC), Manipal College of Medical Sciences (MCOMS), Pokhara, and Kathmandu University, Dhulikhel. There was also a participant each from Universiti Sains Malaysia, Malaysia and from Beth Israel Medical Center, New York.

The international resource person was Prof. Mohamed Izham from Universiti Sains Malaysia (USM), Penang, Malaysia. He is working in the Discipline of Social and Administrative Pharmacy at USM. Many Nepalese pharmacists are pursuing their Masters and Doctoral programs at USM under Prof. Izham. Dr. P. Subish from the same University was also involved in designing and planning the sessions. The local resource persons from KIST Medical College were Dr. R.M. Piryani and Dr. P. Ravi Shankar. All resource persons have extensive experience in publishing. Topics covered were 'Writing an original research article', 'Writing an abstract', 'Why articles are rejected – views from a reviewer', 'Tips for effective scientific writing', 'Writing a case report' and 'Journals where you can publish your work'. The first topic discussed in the workshop was writing an original research article.



Writing an original research article:

An original research article is considered to be a primary source of information. Researchers present the results of an original research project, scientific experiment or study. Teachers and students of scientific disciplines advance their field of knowledge through scientific research. Publishing original research provides an outlet for scientists to communicate with other workers in their fields. All articles including an original research article follows a standard format. The various sections of an original article are abstract, introduction, materials and methods, results, discussion, conclusion, acknowledgements, references and figures and tables. We will now examine these sections in detail.

The abstract provides a brief introduction to the article and highlights its key findings. The next section, the Introduction can have different subsections like a brief background, problem statement, justification for the study, literature review, research hypothesis or questions and expected contributions of the study to the scientific literature and/or community. Methods section states what was done; study design, study population, instruments used, operational definitions and data collection and analysis methods are described. Results section states what was found. In the discussion section the findings are interpreted. This section explains how the study has moved the body of scientific knowledge forward and what the practical implications of the research are. Conclusions should be supported by the results and undue speculation needs to be avoided. An abstract is the most commonly read part of a paper and we now examine abstract writing in detail.

Writing an abstract for scientific articles and conferences:

An abstract can be regarded as an abbreviated and accurate representation of the paper contents and should stand alone. Readers often use the abstract to decide whether to read the full paper. The abstract is also commonly provided in full in various indexing and abstracting services. For research articles the abstract is the last part of the manuscript to be written. For conferences it is written after the study has been conducted and results analyzed. Abstracts can be unstructured, in IMRaD format (Introduction, Methods, Results and Discussion) or in an eight heading format. Abstracts parallel the structure of the research paper and should add no new information not already present in the paper. An abstract addresses the questions 'Why? Where? How? What (outcomes)? And 'What now' (implications)?' In scientific conferences the abstract helps the committee to arrive at an informed decision regarding your presentation and being printed in conference booklets and proceedings helps the audience obtain a preview of the author/s presentation. An abstract is rated on relevance, currency, rigor and interest. Abstracts are usually written in active voice and in the third person singular. Journal or conference guidelines should be strictly followed.

Key words are words which describe the manuscript. They are arranged alphabetically at the end of the abstract and help in indexing and retrieval. Where possible medical subject

headings (MeSH) developed by National Library of Medicine should be used. Common reasons why articles are rejected are now discussed from the reviewer's perspective.

Why articles are rejected – views from a reviewer:

Articles in scientific journals are usually read and commented on (peer reviewed) by other workers in the same field. Reviewers advise the editor of the journal about the scientific merit of the article and whether it can be published.

Common reasons why articles are rejected are:

- Sent to the wrong journal. The manuscript is not relevant to the focus of the journal and may not be of interest to the readers.
- Does not follow the format of a journal article
- The article is not in accordance with the word limits of the journal and is not prepared according to the journal instructions
- Problems with presentation, grammar and language
- Does not add anything of significance to the topic under study or does so in a long and tedious manner
- The manuscript is either too narrow or too broad in scope and does not consider the readership of the journal
- Theoretical framework and references to appropriate literature are lacking
- There are serious methodological flaws.

Rejection should be considered as a stepping stone towards eventual acceptance. The manuscript can be modified considering the reviewer's comments and submitted to another journal. Having studied common reasons why articles are rejected let us now examine tips for effective writing.

Tips for effective scientific writing:

Scientific writing is a highly structured piece of writing and a high level of writing skills is not necessary. Prof. Colin Binns and Dr. MiKyung Lee from the Curtin University of Technology in Australia have listed a set of rules for writing scientific articles which are known as Professor's writing rules or Ten Commandments. Some of these are:

The midnight rule: Reviewers are busy people and will be squeezing your article into a tight schedule. An easy to read layout, simple language and proper organization of the manuscript makes things easier for the reviewer and improve your chances of acceptance.

The girlfriend (boyfriend) rule: Your girlfriend (or boyfriend) should be able to make sense of what you have written. The work should be understandable as far as possible to an intelligent layperson as well as an expert.

The grandmother rule: Authors should regularly visit their grandmothers and leave a copy of the printed manuscript with her. These days many papers are typed on word processing programs using computers. Always keep a



back up of your paper in multiple locations to prevent loss of data due to computer crashes and other problems.

The first and last rule: Many times reviewers speed read a paper and the first and last sentences of a particular section or paragraphs come in for particular attention. Do not waste these important slots.

'Show don't tell' is an important instruction to be followed while writing a manuscript. A narrative structure should link together various parts of the paper. Sentences should be short, written in active voice and address one thought at a time. Each paragraph should have a single, clear message which should be evident to the reader. Unnecessary words should be deleted and short and simple words used instead of long and complicated ones. There are five 'rights' of publishing. These are choosing the right journal for your paper, choosing a right topic and doing background research on the same, submitting the right information, selecting the right words and publishing as promptly as possible (the right time).

One has to plan ahead and get an outline ready before actually writing the manuscript. While writing an original article most authors start with the Methods section and then write the Results. The next sections to be written are the Introduction and the Discussion. The Conclusions are added and the Abstract is the last part to be written. Show your drafts to your colleagues and seniors for their comments and constructive criticism. Grammar and spellings should be carefully checked. The main contributions of your research should be emphasized in the Conclusions. Long sections should be broken down into subsections to improve readability. Think like a reader and keep the readability of your manuscript always in mind. Journals are particular about articles meeting their specific requirements. We now discuss tips for formatting article according to journals.

Formatting your article to meet specific journal requirements:

The submission and review process is extremely competitive and formatting your article in accordance with journal requirements increases the chances of acceptance. All journals provide instructions to authors. With the advent of the internet, instructions can be downloaded from the journal website. Read the journal's guidelines for authors and make sure your article conforms to it. Ensure that the focus of your article complies with the aims and scope of the journal – otherwise the editors will not be interested in it.

Manuscripts are submitted to only one journal at a time and should be submitted to another journal only if rejected by the first one. A short and polite covering letter to the editor should accompany the manuscript. Full contact details of the corresponding author should be included. Other materials like copyright transfer form, ethical approval letter should be submitted if required by the journal. Copies of all correspondence and of the manuscript should be kept. Specific headings should be used as required by the journal. Subheadings can be used to separate various parts of the manuscript. Particular attention should be paid to the References which should be in the journal format. Referencing software can be used if available.

The language of the paper should be non-discriminatory and sexist or racist terms avoided. Check whether the journal requires American, British or Australian spellings. Copyright clearance is required for material used from other authors. Many authors recommend quoting similar works from the same journal and ensuring that important previous work in the same topic has been cited. Plagiarism should be avoided and previous studies should be read, understood and then paraphrased in the writer's own words. Manuscripts are usually typed double spaced. There are two main referencing styles- Harvard and Vancouver. In Harvard style references are cited using the author/s names and arranged alphabetically in the Reference section while in Vancouver style references are cited using numbers and arranged according to the order of citation in the text. Many journals also require a statement of conflict of interest. Case reports are a common form of publication especially among clinicians. We now discuss tips to write a good case report.

Writing a case report:

Case reports have played an important role in medical advancement. A case report is a carefully documented scientific observation useful for education, research, practice and self learning. It consists of the description of one or two patients with similar or related problems. Points to consider are whether there is enough information to publish and whether the case report is worth publishing. The essential components of a case report are title, abstract, introduction, case presentation or description, discussion, conclusion and references. Abstracts for case reports are usually unstructured; but can be structured (introduction, case presentation or description, and conclusion with key words)

The case description should mention the case narration in a sequential order, indicate the effect of treatment, as well as current status of the patient and establish causal and temporal relationships. It should also mention the patients' demographics. This part should also mention the current illness, medical history, social and other relevant history, drug/food allergies, adverse drug reaction history, medication history before admission and throughout the period of study. The name of the drugs, strength, dosage form, route, and dates of administration, and the patient's medication adherence needs to be included. The discussion should compare and contrast the fine distinctions of the case report with published literature. It should explain why the case is unique, and must draw recommendations and conclusions.

Conclusion should be based on the case, put forward evidence-based recommendations and explain the impact of the report on practice and list the scope for further research. Patient identification details should be avoided and written informed consent to publish and to use patient photographs obtained. References are either written in Harvard or Vancouver style. Finally we examine journals where we can publish our work.



Journals where you can publish your work:

While selecting a suitable journal both primary and secondary factors should be considered. The primary factors include area of interest of the journal, the target audience, journal requirements, online availability etc. The secondary factors include the audience (national or international) of the journal, impact factor, chances of getting published, culture of the journal, journal circulation, etc. There are several local and international **publishers** who publish biomedical journals. Some of them are Springer publishing company: <http://www.springerpub.com>, Wiley: www.wiley.com, Elsevier medical publisher: www.elsevierhealth.com, Taylor and Francis www.taylorandfrancisgroup.com, Oxford publishers: www.oup.com and a few others like Jaypee brothers. The **non-publishers** (international, national, local) who publish biomedical journals include medical associations (e.g. Nepal Medical Association), organizations (e.g. International Union of Tuberculosis and Lung Diseases), universities (e.g. Kathmandu University), institutes (e.g. Institute of Medicine, Nepal) and non-governmental organizations (e.g. Anti-TB Association of India) etc. Prior to publishing, authors should clearly weigh the benefits and limitations associated with the publisher. Free access journals are distributed under the terms of the creative commons attribution license, which permits distribution and reproduction in any medium, provided the original author and source are credited. Copyright for these articles can rest with the authors or with the publisher. A list of open access journals can be accessed at the directory of open access journals (www.doaj.com). BioMedCentral and PLoS are two prominent open access publishers. Health InterNetwork Access to Research Initiative (HINARI) is a list of health related journals set up by World Health Organization together with major publishers. It enables developing countries to gain access to one of the world's largest collections of biomedical and health literature. Over 7000 journal titles are now available to health institutions in 113 countries. It can be accessed at <http://www.who.int/hinari/en/>. Specific region wise indexing services exist. Some examples are <http://www.nla.gov.au/ajol/> (for journals from Australia), <http://ajol.info/> (for African journals), <http://www.pakmedinet.com/> (for journals from Pakistan), <http://indmed.nic.in/> (for Indian journals) and <http://www.nepjol.info/> (for Nepalese journals).

Impact factor is a calculation based on the citation of the articles published in a journal. It can be calculated as below.

Impact factor of a particular journal for a year (example 2008) = A/B

- A = the number of times articles published in the journal during 2006 and 2007 were cited by indexed journals during 2008 .
- B = the total number of "citable items" published in 2006 and 2007. ("Citable items" are usually articles, reviews, proceedings, or notes; not editorials or letters-to-the-editor).

Summary:

A one-day workshop on scientific writing was held at KIST Medical College, Lalitpur, Nepal on Saturday, 27th February

2010. An original research article like other scientific writing follows a standard format. The various sections are abstract, introduction, materials and methods, results, discussion, conclusion, acknowledgements, references and figures and tables. An abstract is an abbreviated and accurate representation of the paper contents. Abstracts can be unstructured, in IMRaD format (Introduction, Methods, Results and Discussion) or in an eight heading format. Abstracts should add no new information not already present in the paper. Key words are words which describe the manuscript. They are arranged alphabetically at the end of the abstract and help in indexing and retrieval.

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PEER REVIEW

Not commissioned. Externally peer reviewed.

CONFLICTS OF INTEREST

The authors declare that they have no competing interests