

Evaluation of Research Writing Workshop

Abdalla A Malki, FRCS Ed, MD Orth* Jaffar M Al Bareeq, DLO,RCP,RCS
Fayek A Al Hilli, PhD***

Objective: The aim of this paper is to report on the results of questionnaire completed by candidates who attended a workshop on research writing designed for medical professionals. Highlights of topics discussed during the workshop will also be outlined.

Design: Questionnaire.

Method: A workshop on research and medical writing was conducted on Thursday 31st October 2002. Candidates requested to evaluate each subject topic in the programme of the workshop as excellent, good or no comment, and to add any observations or suggestions. They were also requested to state the benefit of the workshop and whether they would recommend it to other colleagues.

Result: Twenty-one candidates attended the workshop. Seventeen candidates completed the questionnaire, they preferred to run the workshop over two days and to allow medical students and nursing staff to attend. Fourteen candidates found it very useful and would recommend it to other colleagues.

Conclusion: Eighty-one percent candidates completed the questionnaire and 82% of these found it very useful to recommend it to other colleagues. The result of this study would have great impact on the modification of future workshop. After all, customers or target group should be satisfied.

Bahrain Med Bull 2003;25(3):

Writing a research paper is adding a block in the progress of science. Writing is a fine art of communication needed by the medical professionals. Learning the art does not depend entirely on courses, lectures, workshops or books. It needs desire, motivation, practice and guide from experienced senior colleague who knows this art. Workshops may help the beginners to learn the basic requirements of writing.

Usually, medical doctors write patient's notes on admission, progress notes while the patient in the hospital and medical report on discharge. Doctors, especially those who did

* Assistant Chief Editor

** Chief Editor

Bahrain Medical Bulletin
Kingdom of Bahrain

not attend medical research and writing course during medical college should write complete, accurate and informative patients' notes - avoid writing sentence fragments as it usually happens, for example, patient fever. If they practice proper note writing, they would acquire self-confidence and progress to further stage of writing, which might be a letter to the editor, interesting case report for presentation or publication. At a later stage, it could be planned research protocol and papers for publications on an interesting subject or controversial issue. Toni Morrison, novelist said, "I thought of myself as like the jazz musician: someone who practices and practices in order to be able to invent and to make his art look effortless and graceful."

It is mandatory for authors to develop and learn all the ethical aspects of science writing and authorship^{1,2}.

Over the last two decades the editors of the Bahrain Medical Bulletin organized several workshops on medical research and writing to help colleagues develop their research and undertake medical writing. The last workshop on research writing was held in October 2002, which is the subject of this paper. The aim of this paper is to report the result of this workshop. This was made by analyzing the answers of questionnaire completed by the attendants of the workshop on the contents of the workshop. This should serve a reasonable feedback to plan future changes based on their suggestions.

METHODS

The workshop was organized on Thursday 31st October 2002. The time was from 9 AM to 6 PM with two breaks of 15 minutes each and a lunch break of 45 minutes. A hypothetical study on appendicitis was given to the candidates in advance, at the time of registration (Appendix 1). The candidates were requested to use the available materials to write a paper for discussion during the workshop.

The morning sessions were in the form of lectures on the art of writing, statistics, ethics and how to generate research ideas. The afternoon was allocated for more interactions and discussion on the title, introduction, methods, results, discussion, conclusion, abstract references, tables and figures.

To evaluate the contents of the workshop, the candidates were requested to complete questionnaire designed to comment on each section of the workshop as excellent, good or no comment, and to add any observations or suggestions (Appendix 2). They were also requested to state the benefit of the workshop and whether they would recommend it to other colleagues.

RESULTS

Twenty-one candidates attended the workshop, 17 (81%) completed the questionnaire on which the results of this study is based (Appendix III). In response to the benefit of the workshop, 14 (82%) candidates found it very useful and would recommend it to other colleagues. Three (18%) did not comment. The evaluations of the candidates for different

sections of the workshop are shown in table 1. Most of the candidates evaluated different sections of the workshop as excellent or good. However, four candidates did not comment on the section of statistics. Furthermore, the candidates made the following observations and suggestions:

1. The workshop should run over two days with a gap of two to three weeks in between.
The first day should be utilized to deliver the guidelines and the theoretical aspects, and to give material for a written assignment to either individual or small groups of four or five. The second day is to discuss the written assignment or other material brought by the candidates.
2. To open the workshop for students, technicians and nursing staff because they are part of the medical team dealing with patient's care.
3. Presentations of statistics in future workshop should be basic and simple. If advanced statistics is needed for major research work, candidates can consult statisticians or use computer software.
4. Many candidates pointed out that the small advertisement does not promote the workshop sufficiently

DISCUSSION

Seventeen candidates completed the questionnaire, 14 candidates found it very useful and would recommend it to other colleagues. Three candidates did not comment. Those who responded, preferred the workshop to run over two days with a gap of two weeks in between and they advised that medical students, medical technicians and nursing staff should be allowed to attend. Statistics should be simpler than what it was in the workshop.

Previous workshops were structured traditionally as the organizers designed the programme and they ignored the future need of the candidates and their aspirations. Involvement of participating candidates can help in evaluating current and previous programs and improving future ones. Involvement of the participants in evaluation and planning is an asset and could be creative³.

The main components of the workshop that satisfied the candidates are briefly described:

The art and importance of writing: Shakespeare said, "The spoken word is often buried with one's bones - it is the written word that lives long after."

The main aim in writing in medicine is to promote scientific progress and to add a new dimension for scientific achievement. Writing is an exercise that demands the highest quality of intellectual ability. Being an Arab does not mean a master of Arabic language, being English does not mean a master of English language. Cibaway was not an Arab, yet he had great influence on the Arabic language. In English, there are many other comparable examples. Speaking or studying in a language does not mean mastering that

language. Mastering the language is an art, with which some are gifted and the majority have to learn. Amy Tan, novelist said, " I spend a great deal of my time thinking about the power of language - the way it can evoke an emotion, a visual image, a complex idea, or a simple truth." Truth is what we report in medicine and science. We do not use emotive or persuasive language. We mainly report facts not fiction. Therefore, convey the message in medicine with minimum of words and maximum of clarity, complex words does not serve the purpose. A statement in technical or objective language tells us about the patient, procedure, or process. It is informative, impersonal, and not expressive, it could be either the use of impersonal "you" or the use of impersonal passive "it".

Ernest Hemingway, novelist said, "My attitude toward punctuation is that it ought to be as conventional as possible." Punctuation is similar to traffic signals, which regulate the flow of vehicles on the road. A writer - in medicine or literary - must learn the basic rules of punctuation. The Archbishop of York pointed out that Shakespeare spelt his own name at least four different ways, but he always got his punctuation right.

Statistics: statistics express the data and the information more accurately. It can assess facts, variables and probabilities. It was stressed during the workshop that candidates involved in research should be able to use statistics. The candidates were advised to give the exact test used for analysis, the type of computer and the software programme when they write their research. Many candidates required simplified explanation to statistics in future workshops; especially major statistical analysis is now done through computer programs or by consultations with statisticians.

Ethical considerations in research and writing: authorship and ethics are inter-related in conducting research and in writing. The ethical responsibilities of authors start from the selection of the research topic, carrying out the work and reporting it. It involves the number and order of authors, obtaining ethical approval, honesty of reporting and declaration of conflict of interest^{4,5}. It should be remembered that ethical consideration in research had arisen due to plagiarism, forgery and violation of human rights and dignity, as it happened with Nuremberg doctors trial of 1946, Thalidomide tragedy of 1960, Tuskegee syphilis study and intentional exposure of subjects to radiation.

In mid sixties and seventies, the ethical consideration extended to animals because of the pressure of anti-vivisectionists, who exposed much of unnecessary animal suffering during research. No research should be allowed without the approval of ethical committee within the institution. Similarly, no institution, should lacks research and ethical committee, otherwise, the abuse would be widespread.

Research and generation of ideas: Research is a process in which observable data are systematically collected from the empirical world by one scientist and verified by another, in order to describe, explain or predicts events⁶. The empirical observations can be generated from knowledge, experiment, experience, theory, hypothesis or speculation. The principal aim of research is to answer questions, verify observations in the same or different environment, discover or revise facts or theories and, solve problems. Anybody can undertake a research project and with time not only experience is gained but also

development in personal characters. There are steps in conducting research and these include planning, data collection, processing and interpretation, and finally writing.

The sources of ideas for research comes mainly from interest in science, database centers, problems in daily practice, reading, discussion with colleagues, floating ideas from clinical rounds, suggestion, and invitation. Any idea must be weighed according to a set of logistics, expectations, costs, viability, practicality, ethical consideration, and time related factors. Thus in as much as there are research types and methods there are types of scientific research writings. Before undertaking research, a protocol must be prepared and a progress notebook maintained. Medical professionals are lucky, as many issues in medicine need answers. Many questions are raised during the process of diagnosis, treatment and outcome. With knowledge, intelligent inquiry and effort it is possible to convert those questions into appropriate research protocol to find answers⁷.

Title: should interest the reader, informative, correct, descriptive and concise. It should not be declarative. It should be interesting but avoid being sensationalist and using strings of adjectives or nouns, for example, hyperlipidemic, hypertensive, diabetic HIV patients or patient diet management program. A good title will make the reader curious; it is a guide; it hints at the limits of information in the research paper; it should reveal information not hide it, for example, Surgical Treatment for Hypopharyngeal Carcinoma: Feasibility, Mortality, and Results.

Introduction: good introduction should be easy to read, short and attractive in introducing the subject to the readers. It should give good reasons for performing the research. It should describe briefly the problem; review briefly previously related publication and deficiency of knowledge supported by 3-5 citations. The purpose or the objective of the study should be mentioned at the end of the introduction. The length of introduction should not be more than one A4 page; otherwise it will become boring. A detailed critical appraisal of other studies should be left for discussion.

Method: This represent the practical aspect of the research simply meaning what has been done and how? Novel or modified techniques should be explained in details to ensure replication. Measurement taken and statistical analysis should be described in sufficient detail. It should include sampling procedure, design, equipments, exclusion, informed consent, drugs and dosage, and ethical committee approval. It should not include result, discussion, or any hypothetical assumption.

Results: what are the findings? It has to contain the facts extracted from the study. Present patient data first, number studied, gender, age, distribution and duration of follow up. Detailed result should be mentioned in this section of the paper. Clarification may need tables or graphs and figures, but data from these should not be repeated in text. Accurate use of statistical principles is necessary. Average and means are commonly used. However, the use of standard deviation is more informative. Furthermore, tests of significance may become essential to use in presentation of many research results. No method or discussion should be included. Negative results are important. Results should be presented in logic sequence, clearly and concisely. Numbers should match all sections of the paper. Use uniform unit of measurement, si or system international.

Discussion: avoid lengthy discussion; one third of the total length of the paper (Introduction + Method + result + discussion). It should justify the need for what has been done. It summarizes the major findings; discuss possible problems with the methods used; compare and contrast the results of your observations with relevant studies and present status of knowledge with references; discuss the clinical and scientific (if any) implications of your findings and their limitations⁸. You should state the contribution of your work to the existing body of knowledge. The influence of the study on future research practice may need to be explained. Do not repeat data from introduction or result section unless warranted.

Conclusion: What is the message from the study? What are the applications of results in clinical practice, future recommendation. New hypothesis should be addressed. Do not put general statement, which does not relate to the study. Explain gaps and how can future work continue. Some recommendations may be included.

References: Include only retrievable references; they should be comprehensive and relevant to the study, 25-40% should be within the last five years. Number references consecutively in order in which they are first mentioned in the text. Identify references in text, tables and legends by Arabic numerals. Unpublished and personal observation is not accepted as reference. Journal title abbreviations should follow Index Medicus. Two styles for writing references, the Vancouver style is commonest, few journals use Harvard. The number of references should be reasonable. It is advised that for a case report 10-15 references and for study 15-25 references are more than enough, 40 references for major study. Badly written reference might be a good reason for rejection. It was reported in 1985 that 20% of references in BMJ were misquoted, 50% of these seriously misleading. Nearly 46% of all citations in the British journal of surgery were wrong, 39% of these were major error⁹.

Illustrations: Table, graphs, figures, etc used in the paper are not a replacement for the text but support the findings. They should be simple, identifying clear parameters, units of measurements and statistical measures. Ethical consideration must be applied such as protecting the identity of patients.

Abstract: it should be written when the paper is completed. It is a concise presentation of the study. The reader should be able to understand from short and simple statements the background of the study. It should answer the following questions: Why was it done, what was done, what was found, what was concluded. What is the importance of the positive and negative aspects of the outcome?

Structured abstract is currently required by many journals, it is more informative. It helps the reader to find articles that are both scientifically sound and applicable to their practice¹⁰. It should be factual and comprehensive containing the essence of all sections of the paper. Only the abstract of original articles should have a structured format. It should not contain references or any discussion, it should not be more than 250 words.

The main components of structured abstract are: 1. Objective is the aim of the study in

simple words. 2. Design is the type of the study, whether retrospective or prospective, Cohort...etc. 3. Setting is where the study was done, in the eye department, hospital outpatient, school...etc. 4. Method is to be briefly described, two or three lines. 5. Result is to mention the key result in five or six sentences. 6. Conclusion is the main message of your paper.

Review Articles: 1. Meta-analysis: data from different studies addressing the same question, combined and statistically analyzed for one specific question. 2. Systemic review: review of the same topic from different studies in the last five years, objective and systematic. Review should follow: Title, introduction, how the data were selected, presentation of data and conclusion. Never become partial in your presentation.

During presentations of different components of the workshop, the candidates were advised on how to select journal for publication of their work. Authors should be familiar with the quality, scope and policy of the targeted journal¹¹. Furthermore, during reading the instruction to authors of a targeted journal, it is important to write down a checklist of the journal's requirements and make sure that these are adhered to before submitting the manuscript for publication. When constructive criticism received from reviewers, it should be considered as a method to improve the article and maintain the quality of the journal. In developing countries authors, editors and reviewers have moral obligation to make their journals internationally recognized¹².

CONCLUSION

Eighty-one percent candidates completed the questionnaire and 82% of these found it very useful to recommend it to other colleagues. The result of this study would have great impact on the modification of future workshop. After all, customers or target group should be satisfied.

REFERENCES

1. Ronnie D. Who did what? Authorship and contribution in 2001. *Muscle Nerve* 2001;24:1274-7.
2. Huth EJ. Irresponsible authorship and wasteful publication. *Ann Intern Med* 1986; 104:257-9.
3. Nicholas L. Participatory program planning: including programme participants and evaluators. *Evaluation and programme planning* 2002;25:1-14.
4. Sackett DL, Hayens RB. The architecture of diagnostic research. *BMJ* 2002; 324:539-41.
5. Foster HP, Emanuel E, Grandy C. The 2000 revision of declaration of Helsinki: a step forward or more confusion. *Lancet* 2001; 358:1449-53.
6. Haroon TS. How to plan a scientific study. In: Jawaid SA and Jafary MH.: *Medical Writing*. Pakistan Medical Journalism Association 1993:37-47 [Appendix III: Response of 17 candidates to the questionnaire].
7. Krismsky S, Rothenberg LS. Conflict of interest policies in science and medical journals: editorial practice and authors disclosures. *Sci Eng Ethics* 2001; 7:205-18.
8. Hall GU. *How to write a paper*. 2nd edn. BMJ Publishing Group:1998.

9. De lacey G, Wade J. How accurate are quotations and references in medical journals? *BMJ* 1985; 291:884-6.
10. Haynes RB, Murlow CD, Huth EJ, et al. More informative abstracts revisited. *Ann Intern Med* 1990;113:69-76.
11. Radford DR, Smillie L, Wilson RF, et al. The criteria used by editors of scientific dental journals in the assessment of manuscripts submitted for publication. *Br Dent J* 1999;187:376-9.
12. Marusic M. Good editorial practice: editors as educators. *Crot Med J* 2001;42:113-20.