

An analysis of interactive hands-on workshops on medical writing

Masood Jawaid,¹ Zubia Masood,² Shams Nadeem Alam,³ Shaukat Ali Jawaid⁴

Pakistan Journal of Medical Sciences,^{1,4} Medical Writing Workshop Facilitator,² Dow University of Health Sciences,³ Karachi.

Abstract

Objective: To assess the improvement in participant's knowledge and skills pertaining to medical writing by interactive hands-on workshops.

Methods: During the course of three months (January to March 2009), four interactive 5 hours hands-on workshops were organized on Medical Writing. All participants completed a pre-workshop and post-workshop questionnaire. Fourteen questions were included in both questionnaires related to workshop outline. Eight questions were related to knowledge of the participants about different aspects of medical writing (yes/no). Participants were also asked six questions to rate their skills relating to medical writing on a numerical scale of 1-5 (1: no skills and 5: expert). Participant's feedbacks were also analyzed. The pre-workshop and post-workshop responses were compared to see if there was any significant difference by using McNemar test and paired-t test where appropriate.

Results: Response to eight questions regarding knowledge (authorship criteria, types of data, application of significance test, search techniques, plagiarism, Vancouver style of reference and copyright statement) showed that there was a significant difference in all responses ($p < 0.005$). Same trend was observed in skills rating (literature search, basic data analysis, writing an original article, writing references, paper submission for publication) of participants themselves before and after the workshop ($p < 0.0001$). Analysis of feedback showed that participants found the workshop informative, practical and helpful in improvement of their skills for paper writing.

Conclusion: Short interactive hands-on medical writing workshops are helpful and beneficial in improving the knowledge and skills of the participants.

Keywords: Medical Writing Workshop, education, training, writing skills (JPMA 61:66; 2011).

Introduction

'Writing is easy. All you have to do is sit down at a typewriter and open a vein'. This is a famous saying of a well-known American sportswriter and most of academicians and clinicians will identify the pain of writing implied in this quote.¹ Medical Writing is an art which requires considerable effort and continuous practice. Due to inadequate training most of the postgraduate trainees and even faculty are reluctant to take initiative and if this reluctance is allowed to persist it might become a life long inhibition. Possible explanations for this reluctance include a lack of time, lack of self-confidence, difficulty in writing, or difficulty in selecting a topic of wide appeal.²

Writing for publication is an important activity for academics but not enjoyed by many. However, in the changed circumstances where published work is a pre-requisite and is important for selection, appointment and for further promotions in academics, the clinicians are forced to conduct studies and write under compulsion with the result that the quality of their manuscripts is not satisfactory.³ Even after having conducted a study, many clinicians find it extremely difficult to write and prepare a manuscript acceptable for publication in the peer reviewed medical journals. It has been

proved that courses on medical writing result in increase in publications.⁴⁻⁶

Having realized that many colleagues and residents in our medical institutions are hesitant to put pen to paper in order to publish their work because of lack of training, we developed and organized a series of very practical oriented, hands-on medical writing workshops which were aimed at improving medical writing skills. Some other organizations have been involved in such activities but to the author's knowledge; there has been no prior evaluation of the participant's perception and effectiveness of these workshops. The objective of this study was to assess the participant's knowledge and self rated skills after these workshops as well as to analyze their feedbacks in order to improve the quality of workshops.

Methods

During the course of three months (January to March 2009), four workshops were organized in different institutes by Pakistan Medical Journalists' Association (PMJA) in collaboration with Eastern Mediterranean Association of Medical Editors (EMAME), Dow University of Health Sciences (DUHS) and Society of Surgeons of Pakistan.

Workshop Outline:

The interactive five hours hands-on workshops focused on indentifying essential elements of writing original research papers. Participants were limited to 30 in each workshop. Whole course outline and hands-on exercises were developed by the first author. Workshop comprised of sessions on steps in planning and conducting a research, selecting research topic within one's own resources and limitations, literature search techniques, resources with online demonstration, basic statistics, proforma development with hands-on exercise of proforma development in independent groups of 4-5 participants. This was followed by interactive discussion and suggestions to improve the quality of the proforma. Writing an original article, plagiarism with hand-on exercise and writing references with exercise were also carried out. A whole session was devoted for presentation of paper for submission to peer reviewed journals. An important aspect of the workshops was that participants were encouraged to actively contribute to the discussion.

Workshop Faculty:

Workshop faculty included editors of peer reviewed medical journals and faculty members of medical universities who regularly publish in journals and have interest in teaching and training medical writing skills. Faculty members facilitating these workshops varied but all workshops were structured similarly.

Data Collection:

At the start of workshop, baseline information was obtained about demography of participants with reading habits and number of published papers. All participants completed a pre-workshop questionnaire and immediately following the workshop they completed a second questionnaire.

Fourteen questions were included in both questionnaires. Eight questions were related to knowledge of the participants about different aspects in medical writing (yes/no). Participants were also asked six questions to self rate their skills relating to medical writing on a numerical scale of 1-5 (1: no skills and 5: expert). All of these questions were related to workshop outline above.

The second questionnaire contained additional statements regarding participants perceived value of the workshop as follow: Workshop was informative and practical, hand outs were useful, different hands-on exercises were effective, it will be helpful in improvement of their skills of paper writing, recommend this workshop to others, similar workshops should be organized in future as well and it will help them to publish in future.

Analysis:

Data was analyzed by SPSS version 10. Descriptive statistics were obtained about demography and paper reading habits, publications and feedback. The pre-workshop and post-workshop responses were compared to see if there was any significant difference by using McNemar test for categorical response and paired-t test for numerical response.

Results

A total of 120 participants attended four workshops. Out of them 110 (91.7%) questionnaires were returned back and were analyzed. Mean age of the participants was 36.17 ± 10.49 years (Range: 21 - 55 years). Demographic profile of all participants is shown in Table-1. Response to the pre-workshop questionnaire indicated that 64 (58.2%) had not published any paper followed by 12 (10.9%) participants most of whom had published at least two papers.

Response of eight questions regarding knowledge about different aspects of medical writing showed that there was a highly significant difference ($p < 0.005$) (Table-2). Same

Table-1: Demographic profile and reason for participating in the medical writing workshop (n = 112).

Variable	n (%)
Gender	
Male	65 (59.1)
Female	45 (40.9)
Grade	
Consultants	42 (38.1)
Residents	39 (35.4)
House officers	10 (9.0)
Medical Students	14 (12.7)
Research Associates	5 (4.5)
Specialty	
Basic Sciences	33 (30.0)
Medicine and Allied	23 (20.9)
Surgery and Allied	49 (44.5)
Research Department	5 (4.5)
Reason(s) for attending the workshop	
To learn Medical Writing	68 (61.8)
Improvement in writing skills	54 (49.1)
To learn statistics	28 (25.5)
Certificate	7 (6.4)
To take a day off	2 (1.8)
Someone advised	0 (0)
Number of scientific papers read per month	
0	21 (19.4)
2-Jan	53 (49.1)
5-Mar	24 (22.2)
10-Jun	9 (8.3)
>10	1 (0.9)
Number of published paper	
0	23 (20.9)
2-Jan	53 (48.2)
5-Mar	24 (21.8)
10-Jun	9 (8.2)
>10	1 (0.9)

trend was observed in skills rating of participants themselves before and after the workshop ($p<0.0001$) (Table-3).

Participants also commented on the assessment of the value of the workshop to themselves and others. They found the workshop informative, practical and helpful in

Table-2: Participant's knowledge pre-workshop and post-workshop (n=110).

Question	Pre workshop n (%)	Post-workshop n (%)	P value
Do you know the authorship criteria by ICMJE?	24 (21.8)	93 (84.5)	<0.0001
Do you know the different types of data (numerical, categorical)?	73 (66.4)	91 (82.7)	0.005
Do you know which test of significance is applied on different type of data?	39 (35.5)	82 (74.5)	<0.0001
Do you know different search technique like Boolean Technique?	36 (32.7)	78 (79.6)	<0.0001
Do you know different methods of finding of free full text of article?	50 (45.5)	97 (88.2)	<0.0001
Do you know what plagiarism is and how to avoid it?	55 (50.0)	105 (95.5)	<0.0001
Can you write references of journal article, book chapter in Vancouver style?	45 (40.9)	107 (97.3)	<0.0001
Do you know what is meant by Letter of Undertaking (Copyright statement)?	43 (39.1)	89 (80.9)	<0.0001

McNemar test was applied between pre-workshop and post-workshop responses.

Table-3: Participant's perception of their skills pre-workshop and post-workshop (n=110).

Questions about self-reported skills	Pre workshop Mean $\pm$ SD	Post-workshop Mean $\pm$ SD	P value
Effective literature search	2.70 $\pm$ 1.02	3.74 $\pm$ 0.79	<0.0001
Basic data analysis (statistics)	2.03 $\pm$ 1.04	2.71 $\pm$ 0.92	<0.0001
Making of a good quality proforma	2.58 $\pm$ 1.07	3.50 $\pm$ 0.76	<0.0001
Writing an original article	2.32 $\pm$ 1.08	3.00 $\pm$ 0.80	<0.0001
Writing references	2.52 $\pm$ 1.11	3.82 $\pm$ 0.73	<0.0001
Submission of paper for publication	2.14 $\pm$ 1.16	3.16 $\pm$ 0.98	<0.0001

Paired-t test was applied between the groups.

Table-4: Feedback of the participants at the end of workshops.

Question	N (%)
Workshop was informative and practical?	110 (100.0)
Hand outs of the workshop are useful?	107 (97.3)
Different hands-on exercises of workshop were effective?	99 (90.0)
Workshop will be helpful in improvement of their skills of paper writing?	107 (97.3)
Will recommend this workshop to others?	110 (100.0)
Such workshops should be organized in future as well?	110 (100.0)
This workshop will help them to publish in future?	96 (87.3)

improvement of paper writing skills (Table-4).

Discussion

Medical writing skills are different from the skills required for study designing and carrying out research.⁷ An improvement in medical writing skills is likely to improve submission and overall helping doctors to become published authors.⁸ The post-workshop evaluation showed that the workshop was highly rated in all aspects. The main reason for such good response from the participants is practicality and simplicity of all sessions. Overall format of the workshop was designed in such a way that participants could learn from how a topic was perceived to submission to a peer reviewed journal at the end. To the best of the author's knowledge, this is the first time in Pakistan that such a short course to improve medical writing skills has been evaluated and documented. Participant's appreciation about the workshop can be illustrated by the following representative comments:

"It was really informative, timely and helpful as well as interesting."

"Very nicely presented in such a short time. Really helpful not only regarding Medical writing but also how to make a presentation."

This study has certain limitations. Assessment was subjective rather than objective measurement like numbers or quality of publication post workshop. A follow up study about the track record of participants could show the long-term usefulness of such academic activities.

As revealed, the information regarding the number of papers read by the participants per month may not be true, because had they been reading so many papers, their knowledge about medical writing would have been more vast and they would have had more published papers to their credit. Some of the participants were not happy with the basic statistics discussed in the workshop which is reflected in the following comments by one of the participants:

"The workshop was very informative. The only thing which can be improved is to give more time to biostatistics."

However, in a one day course where the facilitators had to cover a large number of topics, it was not possible to devote more time to statistics which is an important but rather difficult subject even for most of the published authors and Editors. Another most common remark by the participants was the short period of time. More elaborate advance three days workshop with some added features will be organized in future.

An important fact which was shared by the authors in the workshop was ICMJE criteria of authorship.⁹ Most authors were not aware of this important information and in most of the studies, the Head of the Department became an

author by default We do not believe that just by providing this information we can bring the change, but we tried to create awareness amongst the participants with a hope that it will help in checking and eventually eliminating this menace of gift authorship.¹⁰

Sommer et al. showed that a two and half day workshop can increase significant knowledge and skills with pre and post-workshop rates of publication showing a positive change.¹¹ Pololi et al. described the effects of short internal multiple sessions and found that participants completed at least one scholarly paper.¹² Although the authors have shown benefits of a short medical writing workshop, it is expected that a longer session might offer greater benefits. A long session (2-3 days) would allow the content to be greatly expanded and easily absorbed by the participants.

This was shown by Lawrence et al.¹³ where participants of a single-day writing course had very little impact on publication outcomes. However, when a similar course was presented in a seminar series over eight weeks, and participants were encouraged to spend a minimum of 20 hours on their own writing during that period, there was a marked improvement in publication outcomes. Several studies have noted that suggested writing interventions improved not just the number of manuscripts developed, but also the quality.⁸

A study on 18 Australian universities revealed that the average academician published less than one paper in peer-reviewed journals every two years, one-quarter had not published over a five-year period.¹⁴ Several factors have been identified as contributing to the publication rates of academics. These include age, gender, rank, institution type and department, intrinsic motivation to conduct research, autonomy and job stress.¹⁵ A study of 8544 full-time academics in the USA examining similar factors impeding men's and women's productivity found little or no effect of family-related variables such as marriage, children or ageing parents.¹⁵ More important contributors were academic rank, salary, orientation towards research and desire for recognition. It was found that younger academics tended to be more productive, perhaps due to their education at a time of increased focus on publications. The same trend can be observed in Pakistan. Now undergraduates have special training in research and most of the medical colleges require students to complete one research project with their graduation. This will help in boosting research culture and result in increasing publication rates.

A number of reasons have been identified why academics do not write for publication. A common reason given for not writing is lack of available time.¹⁶ However, some studies have shown that highly productive writers do

not have more time or fewer commitments than their colleagues who do not write.¹⁷ Some writers have a limited understanding of the writing and publication processes, an uncertainty of what ideas are worthy of publication.¹⁸ One study identified that writing generated fear and anxiety for many academics.¹⁹ Grant et al. have showed that some participants have had good ideas, but felt that their writing ability was not good enough.²⁰ In these interactive workshops, we have tried to discuss all these issues and help the participants to think that they can write for scholarly journals where ever they are, irrespective of their position i.e. from medical students to postgraduates, basic sciences faculty and clinicians.

Conclusion

This study has showed that short interactive hands-on medical writing workshops are beneficial in improving the knowledge and skills of the participants. It is suggested that such workshops should be a routine feature in every institution.

Acknowledgement

We acknowledge the contributions of Dr. Maqbool H. Jafary, Prof. Nazeer Khan and Dr. Jahanzaib Haider, who were facilitators along with the authors in various aspects of workshops and also the enthusiastic participants. We would also like to thanks M/s. PharmEvo for their support and sponsoring all these Medical Writing Workshops.

References

1. Charlton J. The Writer's Quotation Book. Waincott, NY: Pushcart Press, 1980.
2. Huston P. Resolving writer's block. *Can Fam Physician* 1998; 44: 92-7.
3. Jawaid SA, Jawaid M, Jafary MH. Deficiencies in original articles accepted for publication in Pakistan Journal of Medical Sciences: A retrospective analysis. *Pak J Med Sci* 2009; 25: 1-6.
4. Steinert Y, McLeod PJ, Liben S, Snell L. Writing for publication in medical education: the benefits of a faculty development workshop and peer writing group. *Med Teach* 2008; 30: e280-5.
5. Sridhar AR, Willett LL, Castiglioni A, Heudebert G, Landry M, Centor RM, et al. Scholarship Opportunities for Trainees and Clinician Educators: Learning Outcomes from a Case Report Writing Workshop. *J Gen Intern Med* 2008; 24: 398-401.
6. Bydder S, Packer D, Semmens J. The value of a scientific writing training workshop for radiologists and radiation oncologists. *Australas Radiol* 2006; 50: 29-32.
7. Novack L, Jotkowitz A, Knyazer B, Novack V. Evidence-based medicine: assessment of knowledge of basic epidemiological and research methods among medical doctors. *Postgrad Med J* 2006; 82: 817-22.
8. McGrail MR, Rickard CM, Jones R. Publish or perish: a systematic review of interventions to increase academic publication rates. *Higher Edu Res Dev* 2006; 25: 19-35.
9. Uniform Requirements for Manuscripts Submitted to Biomedical Journals: Writing and Editing for Biomedical Publication. (homepage of ICMJE). (Online) 2008 October last update; (Cited 2009 April 4). Available from URL: <http://www.icmje.org/>.
10. Jawaid SA. A collaborative effort to promote medical journalism in Pakistan. *Pak J Med Sci* 2007; 23: 305-7.
11. Sommers PS, Muller J H, Bailiff PJ, Stephens GG. Writing for publication: A workshop to prepare faculty as medical writers. *Fam Med* 1996; 28: 650-4.

12. Pololi L, Knight S, Dunn K. Facilitating scholarly writing in academic medicine. *J Gen Intern Med* 2004; 19: 64-8.
 13. Lawrence MM, Folcik MA. Writing for publication. *J Nurs Staff Dev* 1996; 12: 289-93.
 14. Harris GT. Research output in Australian economics departments: An update for 1984-1988. *Australian Economic Papers* 1990; 29: 249-59.
 15. Sax LJ, Hagedorn LS, Arredondo M, Dicrisi FA. Faculty research productivity: Exploring the role of gender and family-related factors. *Res High Edu* 2002; 43: 423-45.
 16. Page-Adams D, Cheng LC, Gogineni A, Shen CY. Establishing a group to encourage writing for publication among doctoral students. *Journal of Social Work Education* 1995; 31: 402-7.
 17. Boice R, Jones F. Why academicians don't write. *J Higher Edu* 1984; 55: 567-82.
 18. Dies RR. Writing for publication: Overcoming common obstacles. *Int J Group Psychother* 1993; 43: 243-9.
 19. Lee A, Boud D. Writing groups, change and academic identity: Research development as local practice. *Studies High Educ* 2003; 28: 187-200.
 20. Grant B, Knowles S. Flights of imagination: Academic women becoming writers. *Int J Acad Develop* 2000; 5: 6-19.
-