

# Effectiveness of the Scientific Paper Writing Workshop in a New Medical College of Northeast States of India

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## ABSTRACT

### Background

Academic paper writing is crucial for medical professionals, facilitating effective communication, critical thinking, and scholarly contributions in medicine. Proficient writing is vital as it influences knowledge dissemination, evidence-based practices, and medical research advancement. The objective of the current study was to assess the effectiveness of academic writing workshops for medical professionals.

### Methods

The workshop conducted during SAPHCON 2023 spanned four hours and consisted of seven sessions on various aspects of academic writing and publication. Participants completed pre-test and post-test assessments to evaluate changes in their knowledge and comprehension. Statistical analysis using SPSS software was employed to measure the intervention's effectiveness.

### Results

The workshop involved 21 participants who completed both pre-test and post-test questionnaires. Of the participants, 25% were male, and 75% were female, with a mean age of 33.8 (SD = 6.3) years. The post-test analysis revealed an overall increase in the proportion of correct answers for most of the questions. The pre-test median score was 7 (IQR 6-10), and the post-workshop test median score was 10 (IQR 9-11), indicating a significant increase in the median score ( $p=0.02$ ).

### Conclusions

The post-test results showed a significant improvement in the median score compared to the pre-test, indicating enhanced knowledge among participants. The study's findings aligned with previous investigations, highlighting the workshop's positive impact on knowledge enhancement. Our study contributes valuable insights into the effectiveness of manuscript writing workshops in the Indian context, laying the groundwork for future research with larger sample sizes and diverse populations, and exploring long-term impacts.

**Keywords:** academic writing; knowledge; manuscript; medical professionals; workshop.

## INTRODUCTION

Academic paper writing is an essential skill for medical professionals, as it enables effective communication, critical thinking, and scholarly contribution within the field of medicine.<sup>1</sup> The ability to produce well-structured and coherent written work is vital for medical professionals, as it influences the dissemination of knowledge, the development of evidence-based practices, and the advancement of medical research. Recognizing the significance

of nurturing this skill, educational institutions often organize academic paper writing workshops to enhance the writing proficiency of their medical students and healthcare professionals.<sup>2</sup> Healthcare professionals face unique challenges when it comes to academic writing.<sup>3</sup> They must synthesize complex medical information, critically analyze research articles, and effectively communicate their findings to diverse audiences, ranging from patients to fellow medical professionals. Additionally, the

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rapid pace of medical advancements demands that students are equipped with the necessary skills to contribute to scientific literature, enabling the ongoing improvement of healthcare practices.<sup>4</sup> Academic writing workshops offer an opportunity to address these challenges by providing health care personnel with tailored guidance, practical strategies, and constructive feedback on their writing skills.<sup>5</sup> Such workshops typically cover various aspects of academic writing, including literature review, research design, data analysis, and manuscript preparation. Through interactive sessions and hands-on exercises, medical professionals can develop the necessary competencies to produce high-quality academic papers. Although academic writing workshops in medical education have gained popularity, a dearth of systematic evaluations of their effectiveness prevails. Consequently, there exists a critical need to conduct a comprehensive assessment of the impact of these workshops on the writing skills of medical students. By undertaking this study, we aim to fill this research gap and provide valuable insights into the efficacy of academic writing workshops tailored for medical professional.

## METHODS

The pre-conference workshop, facilitated by the authors, took place during the 1<sup>st</sup> SAHS North East India Public Health Conference. Spanning duration of 4 hours, the workshop consisted of seven sessions. The sessions covered various essential aspects of academic writing and publication. The first session focused on authorship guidelines and instructions, emphasizing the importance of proper authorship attribution. The second session delved into the structure of a scientific paper, highlighting the key components and organization required for effective communication of research findings. The third session addressed the structure of tables, figures, and results, providing insights into presenting data and results in a clear and concise manner. The fourth session centered around writing methods and discussion, equipping participants with strategies to effectively convey research methods and engage in critical discussions of study findings. Plagiarism, a critical ethical concern

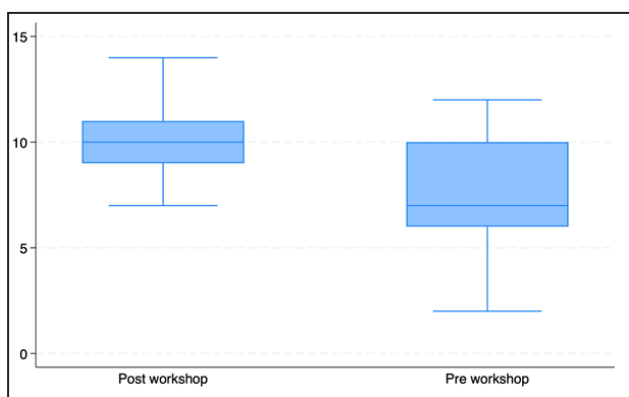
in academic writing, was the focal point of the fifth session, emphasizing the importance of originality and proper citation practices. The sixth session covered essential reporting guidelines, including STROBE, MOOSE, QUOROM, CONSORT, and checklists for RCT and Qualitative research, emphasizing the significance of adhering to these guidelines when reporting research findings. This improves quality and increase acceptability of scientific paper writing in good journals. Finally, the seventh session focused on the communication process with journal editors for successful publication, providing valuable insights into navigating the publication process and effectively communicating with journal editors. At onset of the workshop, participants were requested to fill pre-test and at the end post-test assessments. The primary aim of the pre-test and post-test was to evaluate changes in participants' knowledge, comprehension, and application of research methodology, manuscript writing, and fundamental research concepts. These assessment tools were developed in alignment with the workshop's objectives and content. A two-part questionnaire was administered. The first part collected demographic information from participants, such as their name, age, gender, and email address. The second part of the questionnaire comprised 15 items directly related to the workshop content, specifically focusing on each session covered. Each item assessed participants' understanding by assigning a score of one for each correct response and zero for each incorrect response. Each participant was informed about the study and their willingness to be its part. The differences of participants' responses were measured before and after the session, and differences between the pre-test and post-test was used to estimate the effect of the intervention. Data was analyze using SPSS.

## RESULTS

In the workshop 21 participants filled the data of pre-test and post-test questionnaires. In our study 25% of the participants were male whereas remaining 75% were female. The mean age of the participants was 33.8 (SD) = 6.3. Among those 14 (33.3%) participants had attended similar kind of workshop before. And 8

<b>Table 1. Pre and post questions.</b>			
<b>Questions</b>	<b>Pre-test (%)</b>	<b>Post-test (%)</b>	<b>p-value</b>
Full form of QOROM	7(66.7)	18(85.7)	0.47
Not a subheading of methodology	8(38.1)	12(57.1)	0.84
Suitable study design for the study of rare disease	8(38.1)	17(80.9)	0.58
Sequence of a scientific paper published in a journal	14(66.7)	21(100)	0.01*
Reasons why people do research and publish, except	1(4.8)	2(9.5)	0.01*
Primary data sources, except	7(33.3)	10(47.6)	0.41
Study design having highest Internal Validity	10(47.6)	10(47.6)	0.82
Correct sequence of paper writing	8 (38.1)	16(76.2)	0.58
Reasons for the rejection of the manuscript from publication, except	9(42.9)	13(61.9)	0.84
Sample size calculation in qualitative study	6(28.6)	6(28.6)	0.07
Meaning of Plagiarism	14(66.7)	20(95.2)	0.01*
Reference is different from bibliography	16(76.2%)	18(85.7)	0.01*
Critical factors in publication of an article except	18(85.7)	21(100%)	0.01*
Average acceptance rate of a submitted article world over	9(42.9)	17(80.9)	0.45
Criteria that have to be fulfilled to get Authorship of an article	10(47.6)	15(71.4)	0.55

F = McNemar's test, \* = Significant



**Figure 1. Boxplot showing the Prepost score.**

(38.1%) of the participants had before published an article. In the present study, an analysis of the post-test results revealed an overall increase in the proportion of correct answers for most questions. However, it is noteworthy that the question pertaining to the correct sequence of paper writing did not exhibit an improvement in the proportion of correct responses. Statistical analyses demonstrated significant increases in the proportion of correct answers for several specific questions. These included "What is the sequence of a scientific paper published in a journal?" (p-value = 0.04), "All the reasons why people do research and publish, except?" (p-value = 0.01), "How is the sample size in qualitative study calculated?" (p-value = 0.04), "Plagiarism is" (p-value = 0.01), "Reference is different from bibliography" (p-value = 0.01), and

"All critical factors in the publication of an article, except" (p-value = 0.01) (Table 1). In our study, the pre-test median score was 7 [IQR 6-10] and in the post workshop test the median score was 10 [IQR 9-11]. There was a significant increase in the median score (p=0.02).

## DISCUSSION

In the context of the ever-evolving knowledge surrounding diseases, their pathogenicity, and appropriate therapeutic approaches, research stands as a vital means of keeping pace with these constant changes. To equip medical professionals with the necessary skills, numerous workshops are organized to educate them on scientific paper writing. However, given the rapid increase in the frequency of these workshops, it becomes imperative to assess their efficacy and performance. This study aimed to assess the effectiveness of a paper writing workshop in improving the knowledge of healthcare professionals. The study included a total of 21 participants who completed both pre-test and post-test forms. The average age of the participants was 33.8 years. The findings of our study demonstrated a significant improvement in the median score during the post-test compared to the pre-test. Furthermore, the majority of the indicators exhibited a higher proportion of correct answers, highlighting improved knowledge among

the participants. However, it is noteworthy that one indicator (Which study design has the highest Internal Validity) did not show a significant improvement in this regard. This could be due to failure from the trainers side or due to misunderstanding arising during the workshop among the participants that were not identified and dealt appropriately. This indicates that cognitive skill should be strengthened by one or two manual exercises. Our study revealed a noteworthy improvement in the post-test results, which is consistent with findings reported by Al Faris et al. in their investigation of a one-day dental faculty workshop.<sup>6</sup> Similarly, Dorri S et al. observed knowledge enhancement among cardio-pulmonary in training residents following a workshop.<sup>7</sup> However, it is important to acknowledge that Bakhshandeh H found poor effectiveness of coaching and refereeing courses in a study conducted among university students,<sup>8</sup> which could be attributed to the differences in the study population, content and method of delivery of workshop. Our study was one of the pioneering investigations that examined the effectiveness of a manuscript writing workshop in an Indian setting. By employing a pre-test and post-test approach, we evaluated the effectiveness of the workshop in enhancing participants' knowledge and skills. It is important to note that this study had certain limitations, including the relatively small sample size. Additionally, as the study was conducted in a specific setting with a specific population, generalizability to other contexts may be

limited. Notwithstanding the limitations, our study contributes valuable insights to the existing literature. It sheds light on the effectiveness of manuscript writing workshops in an Indian context and provides a foundation for future research. Future studies with larger sample sizes and diverse populations would help to enhance the universality and robustness of the findings. Furthermore, long-term follow-up studies could explore the sustained impact of manuscript writing workshops on participants' writing abilities and their ability to effectively communicate scientific information.

## CONCLUSIONS

There is significant improvement in participants' knowledge and skills following the workshop. Our study highlighted the importance of such workshops in equipping healthcare personnel with the necessary skills for effective scientific communication.

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**Conflict of interest:** None

## REFERENCES

1. Pololi L, Knight S, Dunn K. Facilitating Scholarly Writing in Academic Medicine. *J Gen Intern Med.* 2004 Jan;19(1):64–8. doi: 10.1111/j.1525-1497.2004.21143.x
2. Malik B. The value of writing skills as an addition to the medical school curriculum. *Adv Med Educ Pract.* 2017 Jul 26;8:525–6. doi: 10.2147/AMEP.S140585
3. Raffing R, Jensen TB, Larsen S, Konge L, Møller C, Tønnesen H. Facilitators and Barriers for Young Medical Doctors Writing Their First Manuscript for Publication. *Int J Environ Res Public Health.* 2021 Aug 13;18(16):8571. doi: 10.3390/ijerph18168571
4. Thimbleby H. Technology and the Future of Healthcare. *J Public Health Res.* 2013 Dec 1;2(3):e28. doi: 10.4081/jphr.2013.e28
5. Ghasemi R, Akbarilakeh M, Fattahi A, Lotfali E. Evaluation of the Effectiveness of Academic Writing Workshop in Medical Students Using the Kirkpatrick Model. *Nov Biomed.* 2020 Jun 14;8(4):182–95. [https://www.researchgate.net/publication/351689864\\_Evaluation\\_of\\_the\\_](https://www.researchgate.net/publication/351689864_Evaluation_of_the_)

Effectiveness\_of\_Academic\_Writing\_Workshop\_in\_Medical\_Students\_Using\_the\_Kirkpatrick\_Model

6. AlFaris E, Naeem N, Irfan F, Qureshi R, Saad H, Al Sadhan R, et al. A One-Day Dental Faculty Workshop in Writing Multiple-Choice Questions: An Impact Evaluation. *J Dent Educ.* 2015 Nov;79(11):1305–13. <https://pubmed.ncbi.nlm.nih.gov/26522635/>
7. Dorri S, Akbari M, Dorri Sedeh M. Kirkpatrick evaluation model for in-service training on cardiopulmonary resuscitation. *Iran J Nurs Midwifery Res.* 2016;21(5):493–7. doi: 10.4103/1735-9066.193396
8. Bakhshandeh H, Ahmadi HR, Behnam M, Hamidi M. Evaluating the Effectiveness of Coaching and Refereeing Courses from University Students' Viewpoints Based on Kirk Partric's Model. *Sport Manag J.* 2014 Jan 21;5(4):161–78. <https://doi.org/10.22059/jsm.2014.36226>

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