Knowledge and attitudes of Indian surgeons regarding professional medical writing support

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Abstract
Aim: The number of scientific papers published from India each year is low. We tried to determine how often Indian surgeons publish in biomedical journals, challenges preventing them from publishing more often, their awareness of the international guidelines that acknowledge professional medical writing as an ethical service, and their willingness to hire medical writers for their publications.

Materials and Methods: A convenience sample of 100 of the surgeons attending a national conference were explained about the survey and asked to complete a survey questionnaire. All results were expressed as absolute frequencies and percentages.

Results: Of the 81 who responded, 43 (53%) had never published. Only 31/81 (38%) had published in the last 5 years. The challenges preventing more frequent publication were reported to be the lack of support for carrying out statistical analyses (58%), lack of time (41%), lack of sufficient data (38%), and lack of support for literature search (37%). Twenty-two (27%) surgeons were aware that they could hire a professional medical writer (PMW), 26 (32%) knew that the International Committee of Medical Journal Editors allowed PMWs to contribute to articles published in the biomedical journals, 75 (93%) were interested in hiring medical writers or to consider it in the future. Only 6 (7.4%) showed no such interest.

Conclusion: There was poor awareness and great interest in hiring PMWs. It might be beneficial to increase the awareness of clinicians about the scientific expertise and communication skills of PMWs and how they can add value to biomedical publications.

Keywords: Ethics in medical writing, medical writing, professional medical writers, surgeons, writing assistance

INTRODUCTION
India, a country of nearly 1.3 billion people, has only 200,000 full-time researchers.[3] While both the United States and the United Kingdom have 79 researchers each for every 10,000 labor force, India has only four. The country spends almost the same amount of money per researcher as China, with 18 researchers per 10,000 labor force, does.[3] Yet, in the year 2013, China published over 300,000 scientific papers while there were less than one-third that number from India. Even the few papers that are published from India have a rather low scholarly impact. It was 30% below the global average in 2013.

Most medical institutes in India have poor research output with 57% of them not having a single publication included

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in the Scopus database for 10 years (2005–2014). Doctors working in medical colleges often claim to be overburdened with clinical duties with very little time for research and academic activities. Lack of adequate guidance from seniors who themselves have few or no publications also seems to discourage junior doctors from publishing. Till very recently, there was hardly any incentive for research and publication as faculty promotions were usually time bound and based on seniority.

In an attempt to make it mandatory for medical teachers to be involved in research activities, since May 2015, the Medical Council of India (MCI) has made research publication an essential requirement for appointments and promotions of teachers of medical institutions in India. MCI has made it mandatory to have at least two original research publications in an indexed journal to be promoted to the position of Associate Professor or Professor. Some universities have also stated that they will not allow their postgraduate medical students to write the final examination unless their research is published.

Most doctors now are overtaken in their career path by those who regularly publish their research. It may be helpful for such doctors to consider publishing more often. One path to encourage publications may be to hire professionals who can analyze the data or at least interpret analyzed data and prepare timely drafts of manuscripts that adhere to the instructions of specific targeted journals. In spite of being experts in their own therapeutic areas and being actively involved in biomedical research, many clinicians struggle to write and publish their research on time. Professional medical writers (PMWs) possess the “four Cs skill” to write clear, concise, comprehensible, and coherent content and can be a great help to researchers. Yet, only a few researchers in India actually seem to be hiring PMWs to help them write better, on time, and more often. There is no data on what Indian doctors think about such professional support.

Many researchers across the world believe that the article must always be written by the researchers themselves and that hiring a PMW is unethical as it involves ghostwriting. This is a myth. Medical writing is not the same as ghostwriting. The confusion between the two is partly due to the confusion about the authorship criteria. In medical publication, the terms “author” and “writer” are not used interchangeably as synonymous terms. In the late 1970s, the International Committee of Medical Journal Editors (ICMJE) began to define authorship. The current recommendations published in 2015 are followed by more than 600 medical journals in an attempt to standardize medical manuscript preparations. Several changes have been made to the initial definitions of authorship over time, and the most current definition is based on fulfillment of four different criteria. The ICMJE clearly identifies writing assistance as a nonauthor contributorship that should be acknowledged in the acknowledgement section of the manuscript. Hence, PMWs can be legal contributors to medical manuscripts.

When the writers are not acknowledged, it is labeled as ghostwriting and is not considered an ethical practice in a medical publication. Several international guidelines today seek transparency in medical publication, and hence, the acknowledgment of PMWs in biomedical literature is an increasingly common practice these days. Journals that adhere to guidelines and recommendations offered by ICMJE, World Association of Medical Writers, and Good Publication Practice (GPP3) guidelines ask authors to acknowledge writing assistance.

Even though it may be acceptable to hire a PMW, authors who have never hired a PMW often wonder if PMWs can do justice to the article. This is an era of evidence-based medicine. Although all funders and researchers have a moral duty to report and publish the results of their research, the publication rates are low. PMWs can help increase the number of publications by doing most of the time-intensive work involved in medical publication. Most authors who have worked with PMWs feel that professional medical writing support added value to their publication.

Several studies have shown PMWs actually enhance the publication. Manuscripts prepared with the help of PMWs have been shown to be associated with an improved completeness of reporting of results, more adherence to guidelines, more acceptable written English as rated during peer review, and rarer retractions due to misconduct. This survey attempts to find out how often Indian surgeons publish in biomedical journals, what challenges prevent them from publishing more often, whether they are aware of the international guidelines that acknowledge professional medical writing as an ethical service, and their willingness to hire PMWs for their publications. The selection of Indian surgeons rather than Indian doctors from other therapeutic areas was simply a matter of convenience.

**MATERIALS AND METHODS**

A survey was conducted on December 18, 2015. Surgeons from across the country attending the Association of Surgeons of India Conference (ASICON) 2015 at
Gurugram, known as Gurgaon at that time, were asked to complete a questionnaire [Figure 1].

The questionnaire was checked and approved by a team of leading surgeons who chose not to take the survey. The questionnaire was divided into two parts. The first part collected demographic information of the surgeons which included their identifications and the city and state they resided in. Identifications were collected as we planned to e-mail the respondents a note of appreciation for their participation and share an overview of the results with them. The second part of the questionnaire consisted of eight questions inquiring about any previously published articles in biomedical journals or chapters in books, the year of last publication, whether they wished to publish more often, major challenges that prevented them from publishing more often, their awareness about the acceptance by ICMJE of the contribution of PMWs to medical publication, and whether they were willing to hire a PMW for medical writing support.

During a break before a paper session at the conference, we met several surgeons attending ASICON 2015 and explained to them individually about the survey we were conducting and that it would help understand whether surgeons in India felt a need for professional medical writing support. We agreed to share the main results with them through e-mail communication. There were around 5000 registrations for the conference. Only the first 100 surgeons who agreed to participate in the survey were handed a printed copy of the questionnaire and asked to fill it up. Data from the completely filled questionnaires were entered and analyzed with the help of Microsoft Excel 2013 (Microsoft Corporation, Washington, United States of America). All results were expressed as absolute frequencies and percentages.

RESULTS

Eighty-one of the 100 surgeons who agreed to participate in the survey returned the completely filled questionnaires. Eighteen of the surgeons did not return the questionnaire as they got busy otherwise. One surgeon had returned an incompletely filled questionnaire. His responses were not considered during the data analyses.

Twenty-one of the surgeons were from north India (Himachal Pradesh, Haryana, Delhi, Uttar Pradesh, and Uttarakhand), 20 from south India (Andhra Pradesh, Karnataka, Kerala, Telangana), 22 from east India (West Bengal, Odisha, Bihar, Jharkhand, Assam, Arunachal Pradesh, and Tripura), 11 from west India (Maharashtra, Rajasthan, Gujarat), and seven from central India (Madhya Pradesh).

Over half of the respondents (43/81; 53%) had never published while only 31 (38%) had published over the last 5 years [Figure 2]. Forty (49%) of the respondents had published case reports, 20 (25%) had published original research articles, and 4 (4.9%) had published review articles in biomedical journals. Six (7.4%) had written chapters in books, 3 (3.7%) had published articles but not in biomedical journals, and none of them had ever published commentaries and editorials.

Seventy-two (89%) surgeons expressed a wish to publish more often while only 9 (11%) surgeons showed no such interest. The respondents cited various reasons [Figure 3] as challenges that prevented them from writing more often. Forty-seven (58%) of the surgeons cited lack of support for data analysis as a reason for not publishing more often. Most surgeons (59/81, 73%) said they did not know they could hire a PMW to support them in writing their articles for biomedical journals. Only 26 respondents were aware that the ICMJE guidelines say PMWs can be legitimate contributors to articles published in biomedical journals [Figure 4]. Thirty-nine surgeons (48%) said they

Figure 1: Questionnaire on the need for medical writing support for doctors in India

Figure 2: Last publication in a biomedical journal
were interested in hiring PMWs, 36 (44%) said “Maybe,” and only 6 (7.4%) showed no interest [Figure 5].

During the 1st and 2nd weeks of February 2016, we e-mailed a note of appreciation for participation to each of the respondents who had filled in their e-mail addresses. We also shared the main results of the survey with them.

**DISCUSSION**

To the best of our knowledge, our study is the first of its kind in India. After an extensive literature search on PubMed, we were unable to find any other study that surveyed the knowledge and attitudes of surgeons or even other clinicians in India regarding medical writing support. In 2014, Marchington and Burd had conducted an online survey of 260 authors in Europe, North America, and Asia-Pacific region to study the attitudes of authors toward professional medical writing support.[19] Out of the 76 responses received, most were from clinicians and academic researchers. Our study was not conducted solely on authors but on surgeons attending a national conference. Authors who have published are likely to have better knowledge of the ICMJE guidelines and a better understanding of the role of PMWs and how they can enhance an article. More than half (53%) of the respondents to our survey had never published in biomedical journals.

Another similar survey was conducted on Croatian-based surgeons.[20] The online survey questionnaire was sent to 327 Croatian-based orthopedic and trauma surgeons, of which, only 61 responded. Although our survey was conducted on only 100 attendees, the response rate (81%) was much higher than these two online surveys.[19,20]

This could be because we conducted an offline survey, approached each participant face-to-face, and collected the filled questionnaires personally.

In Marchington and Burd’s study,[19] nearly 83% (63/76) of the respondents felt that receiving professional medical writing support for their publications was acceptable, and 84% (63/75) valued the assistance provided (in the form of editing, journal styling, conformity with reporting guidelines and manuscript submissions, management of timelines, co-author reviews, scientific/technical writing assistance, expert guidance on authorship requirements/GPP3, and the scientific expertise).[19] All participants were authors, and some might have had the experience of working with PMWs. Although 68% of surgeons in the Croatian study[20] claimed to know about medical writing, further questioning revealed low familiarity with the idea of hiring PMWs. Only 11 of the respondents had ever hired a PMW but they were generally satisfied with the support they received in the areas of language, editing, and scientific knowledge. Surgeons in India seem to lack adequate awareness about the hiring of PMWs. Nearly, three-quarters (73%) of the surgeons we surveyed were not aware they could hire...
PMWs to write their articles, and over two-thirds (68%) did not know that according to ICMJE guidelines, PMWs can be legitimate contributors to articles published in biomedical journals.

Most clinicians understand the need for publishing their research findings in an attempt to disseminate knowledge. However, lack of time is usually seen as a major barrier preventing clinicians from writing more often.\[^{21-24}\] In our study, 58% of the respondents cited lack of support for data analysis as a major challenge preventing them from publishing more often. The lack of time was reported as the second most frequent reason (41%).

When clinicians face challenges in writing and publishing their research on time, PMWs come in handy. Although the PMWs may not be therapeutic area experts, most of them have advanced degrees in life sciences.\[^{7}\] Busy researchers are often unable to dedicate enough time to write about their research. Many researchers find it challenging to actually write and publish their own research. The expertise of PMWs lies on writing well. They combine their understanding of science, good writing skills, and knowledge of publication guidelines to translate the author's scientific ideas into clear, logically presented, and well-structured research publication.

Nearly half of the surgeons we surveyed were either ready to hire PMWs (48%) or agreed they may consider hiring PMWs in future (44%). This shows that when the surgeons were told that the ICMJE guidelines consider the support provided by PMWs to medical publication as a legitimate contribution, most surgeons were willing to consider hiring PMWs to write their research articles.

There were around 5000 surgeons from across the country who had registered for the national conference. Only the first 100 surgeons agreeing to participate in the survey were asked to fill the questionnaire. We cannot generalize the knowledge and attitudes of the 81 respondents to the much larger medical fraternity in India. The sampling frame represents surgeons who attended a conference and not the population of surgeons for the various regions of India. The former group could quite conceivably include characteristics that influence the outcome variable in a way that is not representative of the true population of Indian surgeons. To include a sample representative of an entire population of Indian surgeons, every surgeon should have had the same possibility to have been included in the study.

The questionnaire asked for personal identifying information such as name and contact details. An anonymous response could have encouraged more participants to return the filled questionnaire. It is also likely that the act of revealing one's own personal information might have influenced the types of responses given. However, it is unlikely that those who have published might not have mentioned about their publications or reported fewer publications than they have actually published. The questionnaire was not designed to inquire whether those who had authored articles in biomedical journals had availed any kind of support from medical writers. We, therefore, do not know the prevalence of medical writing support in such articles. It might be helpful to know the experience of Indian doctors who have hired PMWs for their articles. A larger survey of Indian doctors can help understand their knowledge, attitudes, and perceptions about medical writing support better.

The study showed poor awareness and great interest in hiring PMWs. It is a time we created better awareness among clinicians and academicians about the role of PMWs and how they can add value to a manuscript. Now that the MCI has made it mandatory for medical teachers to publish their research to be considered for promotions, many of them see an urgent need to publish in peer-reviewed journals. It may be assumed that with better awareness about what the current publication guidelines say about writing support, researchers in India are likely to seek the support of PMWs to publish more and better quality research articles.

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**Conflicts of interest**

There are no conflicts of interest.

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