Journal Watch

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Retracted publications, the issue of poor results reporting, and the increasing value of online teaching methods

Causes of retracted scientific publications

Fang *et al.*[1] think that it is important to evaluate scientific publications that have been retracted because they feel studying projects that have failed can give a vital indication of the current state of errors in the scientific process. In May 2012, Fang *et al.* undertook a search and detailed review of all English-language biomedical and life science research articles indexed by PubMed as retracted. They identified 2047 retracted articles, with the earliest article published in 1973 and retracted in 1977. They then classified the articles according to the cause of the retraction: fraud (i.e. data falsification or fabrication), suspected fraud, error, plagiarism, duplicate publication, other reasons, or unknown reasons. Additional information was also found as needed in reports from the Office of Research Integrity and a variety of other public records.

The majority of articles (67.4%) were retracted owing to misconduct, which included fraud or suspected fraud (43.4%), duplicate publication (14.2%), and plagiarism (9.8%). Only 21.3% of retractions were owing to error, which is in contrast to previous research in the area cited by the authors that has suggested that error is a more common cause of retraction than fraud. Other or unknown reasons accounted for the remaining percentage. The authors argued that 'incomplete, uninformative, or misleading retraction announcements have led to a previous underestimation of the role of fraud in the ongoing retraction epidemic'. They calculated that the percentage of published articles retracted because of fraud or suspected fraud has increased nearly 10-fold since 1975. They also found that the cause of retraction varied according to the country of origin. For example, studies from the US, Germany, Japan, and China accounted for three-quarters of retractions owing to fraud or suspected fraud. In addition, journal impact factor showed a highly significant correlation with the number of retractions for fraud or suspected fraud and error ($n = 889$ articles in 324 journals, $R^2 = 0.08664$, $P < 0.0001$), an association that has also been found in previous research. Fang *et al.* put forward that their findings highlight the importance of the individuals involved in the publication process (editors, reviewers, readers, etc.) in identifying and tackling misconduct, and suggest that there is a need for increased and ongoing ethical training for scientists and researchers involved in publishing their results.[1]

Using medical writers to improve compliance with reporting research results

In an editorial published in Current Medical Research and Opinion, the Global Alliance of Publication Professionals (GAPP) highlighted the problem of low reporting rates and low publication rates of results from clinical research.[2] The authors touched upon a number of studies which have shown that the majority of results from clinical trials have not been shared as quickly or completely as they should have been, and this includes poor results posting on websites such as ClinicalTrials.gov and worryingly low and slow publication rates in peer-reviewed journals. The evidence also suggests that the problem is worse in academia and government-funded research than pharmaceutical industry-funded research.

GAPP offered a potential solution to the problem. They proposed that trained professional medical writers (making a clear distinction between the fully acknowledged professional medical writer and the hidden ghostwriter) could help researchers meet their reporting responsibilities and play an important role in making sure trial results are conveyed in a complete, timely, accurate, and ethical manner. At this point the authors emphasised the time it takes to complete all the tasks associated with preparing a manuscript for publication and how medical writers can carry some of this workload. They go on to provide evidence from a number of studies that suggest that when authors use professional medical writers 'manuscripts are less likely to be retracted for misconduct, are more compliant with best-practice reporting guidelines,

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and are accepted more quickly for publication'. The authors conclude by suggesting that the accurate and timely communication of research results is ultimately beneficial to patients. They also suggest that more thought should be put into funding the use of professional medical writers in reporting research results, even proposing that an item for medical writing services should be included in research grant applications. GAPP argue that 'Requesting medical writing services should not be seen as shirking a responsibility. Instead, requesting medical writing services should be seen as a sign that researchers are well aware of the deficiencies in results reporting and that they are committed to gaining and allocating the services required to report results appropriately'.[2]

Classroom versus online methods for teaching scientific writing

Writing and the communication of ideas is obviously crucial in the scientific community, and is the core aspect of our jobs as medical writers. A number of studies have compared different teaching methodologies, including traditional methods such as classroom seminars and workshops, and newer methods such as online e-learning and virtual simulation. However, Phadtare *et al.*[3] were unaware of any studies into different methods specifically for teaching scientific writing. Therefore, in 2009 they carried out a randomised controlled trial to compare traditional and online methods for training novice researchers in scientific writing. Forty-eight participants, recruited from medical, nursing, and physiotherapy programmes in the US and Brazil and with minimal previous writing experience, were randomised to one of two training methodologies ($n = 24$ in each group). The standard writing guidance group received standard instruction in a classroom setting, while the online writing workshop group used virtual communication (PowerPoint presentations, audio conferences) supplemented by email, Google Docs, and writing templates as other instruction tools. Mentors were assigned to participants in both groups. The outcomes were manuscript quality, assessed using the Six-Subgroup Quality Scale (SSQS), and self-reported participant satisfaction, measured using a Likert scale. There was also a post hoc analysis of the number of communication events (e.g. emails, phone calls) between participants and their mentors. Manuscripts were analysed by three expert reviewers, and excellent inter-observer reliability was found among them. Nonparametric tests were used to assess efficacy.

Overall manuscript writing quality was higher for the online group compared with the standard group (average ± standard deviation SSQS scores of 75.5 ± 14.2 and 47.3 ± 14.6, respectively; $P = 0.0017$). In addition, online group participants were more satisfied with their learning experience (4.3 ± 0.7 versus 3.1 ± 1.1, respectively; $P = 0.001$) and had more communication events with their mentors (0.9 ± 0.8 versus 2.1 ± 1.2, respectively; $P = 0.0219$) than standard group participants. Phadtare *et al.* concluded that online scientific writing instruction was more effective than standard face-to-face instruction and therefore argued that more thought should be put into using Web-based teaching and instruction and that larger studies in the future should expand on their results.[3]

References

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