Ethics of scientific publication

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ABSTRACT

Published scientific research breeds the development of clinical management guidelines and pathways. Currently, scholarly proficiency is assessed using numerous primitive metrics for incentives that can kindle publication of hoax or flawed research content. Such flawed data can lead to wastage of resources, time, and most importantly harm to the society. Authors, editors, and peer reviewers need to be genuine in conducting, analyzing, and publication of scientific research. Institutions need to be aware and utilize advanced metrics to assess the scientific reputation of researchers. This short review discusses in brief the common authorship and editorial ethical issues encountered in scientific publication and the newer metrics available for the assessment of scholarly excellence. Editors and peer reviewers need to be acquainted with the common ethical issues and follow consensus international guidelines on publication ethics to tackle them appropriately.

Science evolves and is continuously updated by scientifically sound publications. They guide interventions and nurture further research. These publications are increasingly considered as measures or metrics of scholarly performance leading to academic achievement, promotion of designation status, and rewards such as increase in income/pay or grant of funds. Such assessment can increase the pressure on clinicians/researchers to utilize untoward manipulation leading to hoax research content. Such hoax research content can lead to wastage of resources spent further on management and research. Ethical issues arising in the publication can be intentional due to the benefits or accidental due to ignorance. Neither of these deems to be a substantial reason for excuse. Similarly, breakthrough research finding or content of great benefit to the society should be made available to the public and research communities the earliest for the greatest benefit. The journal editors need to be aware of the common ethical issues faced and the methods to identify and rectify them.

The ethical dilemmas/challenges commonly observed could be classified as authorship and editorial issues. The author issues commonly encountered are authorship criteria failure, gift or ghost authorship, duplicate submission, redundant publication, duplicate publication, plagiarism, falsification, and fabrication of data. The commonly encountered editor issues are poorly managed peer review, expeditiousness, financial benefits, deals with alleged scientific misconduct,
confidentiality, and conflict of interest. Journal editors are expected to be cognizant of the various international guidelines that guide editing, conducting, and reporting of research. Few international guidelines to mention are Committee on Publication Ethics (COPE), International Committee of Medical Journal Editors (ICMJE), Council of International Organizations for Medical Sciences, World Association of Medical Editors (WAME), World Medical Association, etc.[1]

The ICMJE (or the Vancouver group) has defined the criteria of authorship which includes (1) substantial contribution to conception, design or collection, or analysis and interpretation of data, (2) drafting or revising critically a data, and (3) final approval of data for publication. These three criteria are required to be fulfilled to claim/assign authorship. The ethical problems of authorship commonly involve the context of gift or ghost authorship. Gift authorship is the inclusion of authors in publication who does not fit into the ICMJE criteria and ghost authorship is the exclusion of authors who fits into the criteria. The contribution of medical writers, illustrators, editors, funding agencies, or individuals not fitting in the ICMJE criteria are to be acknowledged for their contribution and would not be a reason for inclusion in authorship. Duplication is another author issue faced commonly by journal editors. Duplicate submission is submission of the article to two or more journals simultaneously, resulting in unnecessary peer review, editing, and copyright issues. Most clinical research journals follow the principle called the “Ingelfinger rule” which was initially exclusively seen in publications of New England Journal of Medicine. This rule defines “sole contribution” which means an article submitted for publication is accepted by a journal only when it is not published/presented elsewhere to preserve novelty and prevent plagiarism. While clinical research has lagged behind in this context, other specialties have utilized prepublication posts in public forums such as arXiv for wider dissemination of the content and extensive peer-review process.[2] Duplicate publication or redundant publication or self-plagiarism is publication of research with contents overlapping a previous publication by the same authors. A similar form of duplication is the “salami” publication, where the author splits the research content into multiple publications to increase the number of publications. These duplications lead to copyright issues, wastes journals’, peer reviewers’, and readers’ valuable time and also contribute to deviated meta-analysis. Plagiarism is another ethical issue faced while editors handle article submitted for publication. Plagiarism has been traditionally defined as stealing and publishing someone’s idea, thought, language, or expression as one’s own original work. Plagiarism can result due to intentional copying of sentences, phrases, or images to unintentional lazy acts. Such ethical issues can be prevented if the sources are cited or the content is reproduced with permission. eTBLAST [Virginia Tech, Blacksburg, Virginia (VA), USA] is a plagiarism search engine software licensed to the University of Texas detects duplications and content similarities. Numerous commercial software (e.g., Plagium, iThenticate, and Turnitin) are also available to guide authors and editors to check for plagiarism prior submission or publication of the research. Falsification and fabrication of research data are another publication ethical issue faced by the editors and peer reviewers where research data are manipulated to strengthen the results/conclusion by adding or eliminating outliers. These fallacious data can lead to false meta-analysis and misguide interventions. Identification of this scientific misconduct in research publication is an important skill/competency to be acquired by journal editors and international guidelines such as COPE have provided checklists and flowcharts to guide editorial process and policies.[1,3,4]

In addition to the above-mentioned author issues, editorial process issues also contribute to scientific misconduct in publication ethics. The editorial and peer-review processes need to be void of potential conflicts of interest that may positively or negatively affect the decision-making. Editors and peer reviewers need to assess their expertise to review the content and if accepted for review, the time has to be predetermined for the review process. Authors of scientific research deserve prompt unblemished review/expert opinion on their research content. The editorial and peer-review process and decisions on scientific misconduct in a submitted article need to be confidential and to be communicated to the authors without criticism or sarcasm. In case of any identified ethical issues, the alleged misconduct needs to be communicated similarly to the authors for explanation. In case of continuous lack of response from the authors, the communication can be directed to the author’s institution or to the necessary regulatory body handling scientific misconduct (The Office of Research Integrity in the US, General Medical Council in the UK, etc.). In case of alleged scientific misconduct in published research articles, immediate measures of correction of literature such as errata, retraction of article, or expression of concern to raise awareness to a problem can be utilized.[3] Medical journals do get financial aid from sponsors and advertisement and such financial contributions should not bias the editorial decisions. The WAME suggests journals for a clear policy establishment with appropriate sponsors’ to avoid untoward influence in the editorial decisions.

As mentioned early, scientific misconduct is accomplished for scholarly excellence and its benefits. The mere number of publications is highly flawed to assess a researcher’s
scholarly performance due to multiple causes such as redundant/duplicate or salami publications. To avoid these flawed assessments, newer measurements have been phased into measure the scholarly performance. These include citation count, publication count in high-impact factor journals, and certain indices such as Hirsch index (h-index) that is based on citation counts. The use of “citation count” parameter alone would not be helpful in the assessment of scholarly performance since inappropriate self-citation of own previous research by authors and by editors who prefer research articles citing one’s own journal, leading to skewed citation counts. Recently, composite metrics such as Research Gate (RG) score and A-miner have been introduced to accurately measure scholarly excellence. “Research Gate” measures scholarly performance using RG score that is based on parameters such as research contribution, reputation, and involvement of the author in discussion forums. This score has been recently criticized for its skewed result and irreproducibility.[6] “Arnetminer” (A-miner), a free online service, is designed to identify relationships and correlations between research content (publications, conferences, etc.) and researchers. In addition to the publication and citation count, this software uses few other composite measurements (h-index, A-index, G-index, impact factor, longevity, activity, sociability, diversity, uptrend, New Star, Rising Star, etc.) to assess and rank a researchers’ scholarly performance.[7,8]

Since the scholarly performances are currently assessed based on the number of publications than the usage of above-mentioned composite metrics, authors would be driven toward scientific misconduct by gift authorship, ghost authorship, salami publication, plagiarism, etc. To avoid these issues, two steps can be taken: First– editors and peer reviewers need to be aware of the possible ethical issues and vigilant enough to identify and tackle them; second– institutions/organizations need to assess the scholarly performance of researchers using the newly introduced, reproducible, and reliable composite metrics. Such steps would improve the quality of the research publication thereby enhancing the authenticity of the derived clinical management protocols.

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