

## Publication ethics

Academic research involves many coordinated steps and processes – appropriate study design, study execution, data collection, data analysis, and finally publication. While going through these steps and culminating in a publication can be an exhilarating experience, one should be aware of ethical code of conduct that binds researchers at every stage. The Committee on Publication Ethics (COPE) is an international forum for editors and publishers of peer-reviewed journals that provide the “code of conduct” and “best practice guidelines” that define publication ethics and advises editors on how to handle cases of research and publication misconduct.<sup>[1,2]</sup> In this editorial, we introduce concepts collectively called “publication ethics” including statutory and ethics approval, informed consent, data manipulation and research fraud, plagiarism, simultaneous submission, duplicate publication, self-citation, consent to reproduce published material, ethics of authorship, and conflicts of interest [Fig. 1]. We also discuss the repercussions and consequences one may face if such misconduct is detected.



**Figure 1:** Types of research and publication ethics

## Ethics Approval, Informed Consent, and Data Confidentiality

As per the regulations provided in the "Schedule-Y" (Drugs and Cosmetics Rules, 2005, the Government of India) by the Drugs Controller General of India (DCGI), it is mandatory to get approval from a DCGI-registered ethics committee before commencing a sponsored drug trial.<sup>[3]</sup> In addition, since 2009, it is mandatory to register clinical trials with the Clinical Trials Registry of India. Guidelines for the formation of the ethics committee and its code of conduct have been outlined in the Schedule-Y. The Indian Council of Medical Research (ICMR) has also provided guidelines for ethics approval before commencing studies in India. Authors and researchers must be aware of these guidelines and adhere to these regulations.

Obtaining informed consent from all the study participants is critical and should not be trivialized by the authors. The DCGI and ICMR provide templates for the consent form (Appendix V, Schedule-Y), which must be adopted by all researchers in India. The author should also be aware of the guidelines provided by the International Conference on Harmonization Good Clinical Practice and the tenets of the Declaration of Helsinki.<sup>[4,5]</sup> Recording audio-visual consent is the norm for industry-sponsored randomized clinical trials currently. The consent forms must commit on protection of patients' personal identity and other confidential data (e.g., socioeconomic status). In addition, the consent forms must include patient rights clearly in a language understandable by patients. The editorial board of journals may ask for documented proof of the consent form used by the researchers, and these should be maintained for a minimum of 5 years from the time of termination of the study.

## Data Manipulation and Research Fraud

Research fraud refers to publications that report results and draw conclusions from data that are not generated by the study (fabrication) or are generated by manipulating the data (falsification). These offences are also applicable to images that are modified to conceal the truth. It is relatively simple for experienced reviewers and editors to decipher whether the authors indulged in research fraud by looking at the statistics, tables, *P* values, 95% confidence intervals, odds ratios, etc. Fabrication and falsification are extremely serious forms of research misconduct. If editors or reviewers are suspicious at the time of review process, they may ask the authors to disclose the raw datasheets to confirm or alleviate the suspicion. Editors may request for the datasheets even after a few years of publication if sufficient doubt is raised. Hence, all data from the clinical study should be preserved for a reasonably long period.

## Plagiarism

The use of previously published work by another author in one's own manuscript without consent, credit, or acknowledgment and fraudulently passing it as one's own work is referred to as plagiarism. This is the most common form of scientific misconduct in manuscript writing. Plagiarism can be of two types depending on the extent of the content reproduced: (a) clear plagiarism, defined by COPE as unattributed use of large portions of text and/or data, presented as if they were by the plagiarist and (b) minor copying of short phrases only (e.g., phrases in discussion of research paper) without any misattribution of data. Clear plagiarism could be literal copying, i.e., word-for-word copying of large parts of a previous manuscript, substantial copying, i.e., reproducing major parts of a previous paper such as text, tables, and figures, paraphrasing, i.e. copying the idea from a previous paper without copying verbatim and text, recycling also termed as self-plagiarism when an author uses the same text in multiple papers without citation of the prior work.

Authors must remember that crediting previous authors for their work is vital in providing context to their own research. Journals often use plagiarism-checking software that assists editors in identifying plagiarists. The COPE provides clear guidelines on the processes to be followed to tackle plagiarism when it is detected in the review phase and when detected after publication. Besides, the University Grants Commission (UGC) has prepared a proposal to consider plagiarism a legal offence in India.

## Simultaneous Submission

Submitting a manuscript to multiple scientific journals at the same time is termed as simultaneous submission. At the time of manuscript submission, most journals obtain a declaration from the authors that the manuscript is original and is not being considered for publication by any other scientific journals. Declaring as such and then disregarding this process leads to submission to another journal where the chances of success are perceived to be better by the authors. This could lead to publication of the same manuscript by two different journals. As this type of misconduct occurs at the discretion of the author alone, the onus is on the author to submit to one journal and wait for a decision before submitting to another journal.

Submitting/presenting a paper for a scientific conference does not preclude authors from submitting the same paper for publication to a peer-reviewed journal.

## Duplicate Publication

Submitting a new manuscript containing the same hypotheses, data, discussion points, and/or conclusions as a previously published manuscript is called as duplicate publication. This is similar to plagiarism, but instead of copying phrases verbatim, the same data, images, and study hypothesis are replicated in another paper. The COPE classifies duplicate publications into major and minor offences. A major offence is defined as a duplicate publication based on the same dataset with identical findings and/or evidence that authors have sought to hide redundancy, e.g., by changing title or author order or not referring to previous papers. A minor offence, also referred as "salami slicing," is defined as a duplicate publication with some element of redundancy

or legitimate repetition or reanalysis (e.g., subgroup/extended follow-up/repeated methods). Publications in regional journals or non-English journals are most commonly used for duplicate publications by authors. Authors must refrain from such misconduct and recognize that this is unethical behavior.

The COPE provides clear guidelines on handling duplicate publications in addition to rejecting and revoking the submitted or published papers. Performing a separate confirmatory study excluding previously published data and with a larger sample size does not amount to duplicate publication, even though the study hypothesis remains the same.

## Self-citation

Citing one's own published work in subsequent papers that are out of context to the research being reported is referred to as self-citation. For experienced researchers, the number of times a paper is cited sometimes matters more than actually publishing it. In addition, total numbers of citations are used to calculate metrics such as G- and H-index, which may be considered for academic promotions, thus driving senior authors to pursue self-citation. This is perceived as unethical by most of the scientific community and looked down upon by peers. However, sometimes, authors may have published a large amount of literature in their niche field and the subsequent paper is a continuation of previous papers, making self-citations inevitable. However, authors should not introduce concepts outside the scope of the current paper to cite one's own work. The onus remains on the authors to guard against such scientific conduct.

## Ethics with Authorship

Every journal has authorship criteria based on the ICMJE guidelines for qualifying to become an author in a manuscript. The ICMJE states, "All persons designated as authors should qualify for authorship, and all those who qualify should be listed." The ICMJE describes three basic criteria that must be collectively met to be credited with authorship:<sup>[6]</sup>

- a. Substantial contribution to the conduct of study including its conception and design, data acquisition, statistical analysis, and interpretation
- b. Drafting or revising the article for intellectual content
- c. Approval of the final version.

The extent of involvement decides the order of authors. However, the order of authors, especially the first author and corresponding author, can sometimes be a reason for discontentment and disputes. It is always a good idea for the study team to have a meeting and sort out authorship issues at the time of commencement of the study, and ideally enter into a contract, thereby allocating different roles to authors depending on their authorship order.

The three major types of misconduct with authorship are ghost authorship, gifted authorship, and guest authorship. Ghost authors are those who contribute substantially in the development of the paper but are not given authorship or acknowledgment in the published paper. These are usually paid authors and should be acknowledged if authorship is not given. Gift authorship refers to inclusion in the list of coauthors simply due to an affiliation to an institute where the research was conducted. Gift authorship is typically provided to heads of institutions or departments even without significant contribution to a particular study. Guest authorship is usually provided to individuals whose presence as a coauthor significantly improves the chances of acceptance of the manuscript. Changes to authorship (addition/removal) after acceptance or sometimes after publication is possible if all coauthors agree to this amendment and have individually signed the requisition sent to the editor of the journal.

## Conflicts of Interest

Conflicts of interest, also called as competing interests, are defined as financial, personal, social or other interests that directly or indirectly influence the conduct of the author with respect to the particular manuscript. Having competing interests in a product or device under consideration is not considered unethical, however, failure to disclose such hidden interests severely jeopardize the outcomes reported in the paper. Once disclosed, it is the discretion of the readers to determine the influence of the conflicts of interest on the conclusions of the paper. A recent study showed a poor understanding of "conflicts of interest" and important ethical issues among Indian medical scientists or journals.<sup>[7]</sup>

The ICMJE has produced a common form to disclose any conflict of interest that has to be individually signed by every coauthor and uploaded to the journal along with the manuscript files. Direct conflict of interest emerges when the author derives employment, owns stocks, or patents of the product (drug, device, etc.) discussed in the paper. Indirect conflict arises when the author receives honoraria and research grants to do the study, paid lectures to popularize the product, etc. What constitutes conflict of interest is left to the discretion of the author and authors are advised to err on the side of declaration of all their financial disclosures, irrespective of whether they are related to the current manuscript or not.

## Consequences if Detected

The COPE provides clear guidelines and steps to be taken when each of the above-mentioned misconducts is identified.<sup>[1]</sup> The first step taken by the editorial board is contacting authors and informing them that their misconduct has been identified. If the authors acknowledge and accept their fault, the paper is rejected and the leadership in the authors' institution is informed. If the paper is already published, authors are provided with an opportunity of self-confession in the form of an erratum in the journal. If the

misconduct is major, the editor has the right to revoke the paper after due diligence is performed and the misconduct confirmed. The authors can be blacklisted by the journal, and information is shared with COPE so that all member journals are informed. If authors deny their misconduct, editors can take cognizance and appropriate action as per the COPE guidelines. In addition, authors can be questioned by the ethics committee of local bodies such as the Ethics Committee of the All India Ophthalmological Society, and suitable punishment can be handed out as per the standard operating procedures.

## Conclusion

There are various forms of unethical practices that authors resort to, sometimes intentionally and occasionally by accident. Being aware of publication ethics enlisted herein will help readers to consciously avoid such misconduct and perform honest ethical research and pursue publications.

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