

Integrity and ethics in research and science publication

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Research integrity is a recent dimension of research ethics that guides good scientific practices and professional duties related to research activities. Based on fundamental values of science and research ethics such as honesty, transparency, respect, impartiality, accountability, and good management of scientific activity, the discussions have raised and oriented important questions in the field of science and ethics.

Science production involves work by different actors in a series of acts and commitments based on mutual trust and sharing of responsibilities, ranging from the planning of knowledge output to the dissemination and use of results by society.

Science publication involves an intrinsic and inseparable relationship between research integrity and ethics. The editorial process is a “sentinel site” for identification, prevention, and repression of misconduct, the key element for proper functioning of the research system in the dissemination of high-quality and reliable scientific knowledge ¹.

Disputes over authorship and co-authorship, conflicts of interests, plagiarism, duplicate publication, research performed without free and informed consent, fabrication and falsification of data, and improper use of information from databases are some examples of misconduct ^{1,2}. A publication cannot be ethical if there was misconduct in its production ¹. The editorial process thus requires good practices in the defense of integrity in science dissemination, allowing ethical assessment of publications in addition to their scientific assessment, and preventing misconduct.

Scientific activity is always dynamic and broad, reflecting global and local cultures and social dynamics. Ethical research standards can vary between countries and between specific fields of knowledge as to the requirements for conducting studies, the need for prior ethical assessment, and the way in which ethical review is institutionalized. Considering this diversity of scientific and institutional practices and ethical pluralism, the international community has agreed on ethical parameters and guidelines that should be universally respected. This plural and dynamic context lends greater complexity and expands the responsibilities of researchers and editors in the management of science publishing.

To what extent should journals and editors play an active role in ethical oversight of the editorial process? What are the limits and possibilities of addressing ethical issues in

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research and the integrity of this process? These pressing questions have required in-depth reflection on ethics in scientific publications.

In this editorial, we present some critical aspects in the ethical oversight of the publishing process based on national and international ethical guidelines and deliberations by the Committee on Publication Ethics (COPE)³. Such guidelines have assisted editorial teams in the adoption of measures and decision-making on manuscripts submitted for publication.

COPE recommends that ethical oversight should include (but not be limited to) policies for consent to publication, care in relation to ethical conduct in research involving human subjects and vulnerable populations, handling of confidential data, and ethical business and marketing practices. The committee highlights four criteria for oversight in addition to those usually adopted during the editorial review: (1) scientific-methodological validity and the study's contribution to the field of knowledge and to society; (2) weighing of the risks and benefits for the study population; (3) procedures adopted for mitigation/minimization of individual and collective risks and harms; and (4) proof and analysis of compliance with regulatory, institutional, and/or legal requirements related to the study's ethical assessment.

Recurrent doubts on ethical oversight by the editorial team in the last decade and submitted to the COPE Forum are related to the need for approval by ethics committees or institutional review boards, before or after the study, and referrals by periodicals pertaining to the various standards in the ethical rules between countries and fields of knowledge. Another recurrent topic is the use of terms of consent and assent and possibilities for waiver in studies with children and other vulnerable groups in studies considered low-risk, self-experimentation, and social media surveys.

The editorial policy of expert peer review is widely adopted by journals and is indispensable to the analysis of scientific and methodological validity and the study's contribution to the field of knowledge and society. The expert reviewers verify possible biases and cofactors that have not been considered and that can compromise the results and the admissibility by the scientific community of the procedures adopted by the study. Based on the field's research output, the reviewers strengthen their assessment and recommend updates and clarifications on these aspects and related to the journal's scope.

The study's methodological and ethical information also allow examining the criteria for weighing risks and benefits resulting the research and the procedures adopted for minimization of risks and harms to the study population or collective groups. Lack of clarity in the procedures justifies the editors' requirement of additional information before proceeding with the editorial process.

The requirement of assessment and prior institutional approval of research studies involving human subjects, by ethics committees with multiple professional composition, was already present in the *Declaration of Helsinki* of the World Medical Association in 1964, and the procedure is widespread and institutionalized in most countries. In case of doubt concerning the existence of specific ethical regulations and standards, such as mandatory ethical review by institutionalized bodies in the respective research sites, the editorial team should request clarification from the researchers and perform careful assessment of their compliance. The editorial team may even reject prior ethical assessment by committees or refuse publication if it considers the assessment inappropriate (or in the absence thereof), as in case of serious violation of ethical duties established in the local and/or international context.

The declaration and explanation of the free and informed consent process for study subjects are required to protect the privacy and dignity of persons involved in studies. Some themes are the object of doubts and involve specific ethical aspects: use and sharing of databases and care pertaining to information privacy, authorization for use and security, with specific national and international regulation ⁴; application of methods and techniques commonly used by the social and human sciences in research in the health field ⁵, such as ethnographic studies, participant observations, and online interaction with persons for research purposes. There is an ethical consensus that all these modalities should be considered interventions that require prior ethical approval of the research project by committees and that should obtain participants' consent, with possibilities of waiver authorized by the committees and duly founded and justified, with explanation of the additional precautions and the conduct to be adopted a posteriori ⁶. Such ethical duties have been provided for and agreed upon by international consensus since 1947, in the *Nuremberg Code*, and reiterated and updated in different sociopolitical contexts, fields of knowledge, and ethical standards over the decades.

The ideal approach would be to avoid performing ethically inadequate studies, but it is not always possible to identify them in the assessment of projects by research ethics committees or in the process itself of ethical oversight by editorial teams. An active, conscientious, and responsible stance by the network of actors in the identification of malpractice is essential for overcoming these limitations, encouraging referral of objections and evidence to editors in case of misconduct observed by readers in the published studies. Editors have taken such measures as correction and retraction of articles according to the seriousness of the conduct verified after publication, alerting the entire academic community and society of the occurrence.

Measures such as non-acceptance of prior ethical assessments or absence thereof – when not required at the study site or in the specific field of knowledge – and retraction and correction of published articles are always exceptional. Careful assessment by the editorial team is thus required, in dialogue with the authors, their institutions, and other parties when appropriate, ensuring the right to reply and ample defense, with deliberations that are duly founded and oriented by values that involve research integrity.

Given the various interests that permeate research relations and activities and that can influence studies' performance and the editorial process itself, the identification and treatment of possible conflicts of interests is another central aspect of the editorial process. Such conflicts may be financial, personal, academic, related to institutional affiliation, political, or even religious. They may also be related to the technology used in the research or in the presentation, as well as to competing technology. There is consensus on the importance of identifying such conflicts and the impossibility of eliminating them completely from scientific publications ⁴.

In this sense, COPE recommends that periodicals should establish clear and objective institutional policies that allow identification and adequate treatment of conflicts of interests. Disclosure of the source of financing, possible conflicts of interests, and even the nature of the relationship between researchers and funders are some of the requirements by editors. It is also recommended for editors to include orientation on the process of treating these conflicts identified by the authors, reviewers, and editors or between them. Disclosing a potential conflict of interest of any nature in the editorial process allows greater transparency and credibility in the research production ^{3,7}.

Good editorial practices recommend strengthening internationally consolidated ethical standards and careful ethical oversight in assessing studies for publication. Editors enjoy legitimacy acknowledged by the scientific community in the sense of requiring compliance with internationally agreed standards.

Ethical oversight processes will always be limited, and to achieve this ethical value of integrity, each actor should play his or her role actively, conscientiously, and responsibly. Institutions should establish policies to promote academic integrity and investigate and resolve cases of misconduct. Researchers should adhere to good practices and take responsibility in performing and managing the research and disseminating the results. Scientific periodicals should encourage research integrity and monitor the quality and accuracy of the information. The public should exercise participant citizenship and use the research results conscientiously and critically, besides turning to the available channels for denouncing malpractice when it occurs.

It is essential to perceive the transformative value of the knowledge generated by research as a fundamental human right to wellbeing and scientific progress. It is equally urgent to assume ethical awareness of each person's actions in the production and dissemination of scientific knowledge.

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Additional informations

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