Publication Ethics: Science at its informative best

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Academic publishing is a scholarly achievement and provides a medium to make explicit, both credit and responsibility, for intellectual published articles. The benefits of collection of clinical information on patients from dissemination of findings in printed and electronic format and the positive influences of biomedical publishing on career promotion, advancement of medical knowledge, institutional prestige and sponsors of grants are all well recognized. Responsibility for the published work that is inseparable from those merits is, however, not widely accepted.

Medicine is a profession based on trust, integrity, philanthropy and altruism. This societal expectation of the profession is associated with an evolving public awareness of the core values of scientific enquiry such as critical analysis, evidence-based inference, hypothesis validation, inherent statistical bias, conscientious motives and research autonomy.

Members of the medical profession and the public, hence, generally agree that a culture of "zero tolerance" should permeate for academic dishonesty, particularly publication misconduct. Increasing examples of publication misconduct has been observed over the past decade indicating that modern medicine's key doctrines of scrutiny, trustworthiness and accountability are being undermined by unethical practices and attitudes of a few.

There is now growing concern among the research scientists about this behavior and progressive appreciation of the need to urgently address all these issues. World Association of Medical Editors (WAME) and the International Committee of Medical Journal Editors (ICMJE) have thus recently issued important policy statements on good publication practice.

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Table-I Common types of publication misconduct and how to prevent them

	Ethical principle	Misconduct	Prevention
1.	Ethical conduct of research in human subjects and animals	Research misconduct	Author(s) should provide signed patient consent forms and ethical committee/institutional review board approval, if requested
2.	Intellectual property ownership	Plagiarism	Easier detection using web-based resources
3.	Originality of publication and conformity with international copyright laws	Duplicate (redundant) publication	Electronic search of biomedical literature databases using modern search engines and advanced search options
4.	Rigorous description and discussion of result	Scientific fraud (data fabrication or falsification)	Author(s) should provide raw data, if requested
5.	No conflict of interest related to research funding	Deduction bias	Author(s) should disclose any financial interests involved in their study
6.	Publication of negative/ adverse outcomes/findings	Publication bias	Author(s) must provide evidence of registration of their trial at submission (reference/number)
7.	Non-intrusion of political interests and prejudice on editorial and reviewer decisions	Affiliation bias	Frequent monitoring of journal policy, editorial performance and eviewer decisions with possible blinded peer-review of manuscripts
8.	Authorship criteria	Ghost or guest authorship	The nature of each contributor's participation should be made transparent by a statement, preferably published with the article, of their names and individual contributions

Basic Publication Ethics

* Study subjects in clinical trial do not often truly understand the nature of intervention, accept the placebo concept and enjoy individual autonomy to give "informed" consent.

* The balance of equity between physician control and patient participation in different parts of the world is also a contentious issue.
* Improved access to health services as a result of research enrolment may constitute an inappropriate incentive that compromises the consent procedures and qualify for research misconduct.
* The scientific literature can be skewed by redundant publication with significant and dire consequences if results are fabricated or inadvertently included more than once into meta-analyses.
* Stringent rules and firm sanctions should be globally enforced and mutually imposed by academic authorities, regulatory bodies and publishers to publicly expose and discredit fraud, duplicate publication and plagiarism. To achieve this Web-based resources with powerful search engines are currently available to facilitate detection of these notoriously overlooked breaches of the publishing code and literary aptitude *(www.plagiarism.com).*
* Author(s) should agree *in writing* to allow the journal to review the raw data and signed patient consent forms or ethical committee/institutional review board approval of the study, when and if requested.
* This procedure verifies and authenticates the reported methodology and results. Furthermore each author should state in writing whether or not he/she has a financial relationship with an organization that might have a vested interest in the conduct and reporting of the study.
* This information should be shared with the reviewers and published with *each* article. Authors should also state in writing that they have had *full* control of all primary data.

Registration of Clinical Trials

* Prior registration of clinical trials within a freely accessible public domain at submission is now a *mandatory* requirement for a consortium of several reputable biomedical journals to eliminate publication bias and document authors contribution.
* A prototype registry is *www.clinicaltrials.gov* sponsored by the United States National Library of Medicine.
* Editorial and reviewer decisions should be objective, autonomous and non-discriminatory against the geographical origins of the manuscript including the nationality, ethnicity, political beliefs, race or religion of the authors.

* A possible strategy to minimize this "affiliation" bias is possible through blinded peer-review systems that mask author and institution identity in the submitted manuscript.
* Everyone who has made *substantial* and *intellectual* contribution to the study on which the article is based (the research question, design, analysis, interpretation and written description) should be an author but sometimes this role in not mentioned in the manuscript which at times promotes "ghost authorship".
* Including names of certain authors only because of their reputation, authority or friendship "guest authorship" constitutes violation of publication ethics.
* Performing technical services, translating text, recruiting patients for study, supplying materials and providing funding or administrative and logistic support are *not sufficient* for authorship. However, these contributions can be acknowledged in the manuscript.

Committee on Publication Ethics

* The expertise and services offered by the *Committee on Publication Ethics [COPE]* should be utilized.
* COPE is an independent and non-profit body that gives impartial and anonymous advice and suggests action algorithms and decision flowcharts in difficult cases of publication misconduct and provides updated information about the prevalence of various types of misconduct and other ethical issues.

CONCLUSIONS

Publication misconduct can ONLY BE MINIMIZED by:

* Perceiving the double dividends of combining ethical research conduct, open reporting of results with good clinical practice.
* Treating our professional signature with the respect it deserves.
* Understanding the tyranny and politics of industrial sponsorship.
* Inhibiting our personal parochialism and scientific prejudice.

RECOMMENDATIONS

1. Publication misconduct will not be checked successfully as long as training in publication ethics, standards and responsible research performance is not ensured.

2. Academic health organizations and biomedical publishing houses should not presume that young aspiring physicians will automatically, unconsciously and passively learn publication ethics. They need to be taught and educated in publication ethics.
3. Using paper cases similar to those depicted in the COPE referral scenarios, explicit ethical issues can be addressed. Other important steps which need to be taken include creating awareness and identifying misconceptions thereby facilitating development of academic virtue, professional sensitivity, personal integrity and moral reasoning. Hopefully all this will eventually lead to "best" publication ethics being practiced by all those concerned.

Useful resources

Committee on Publication Ethics [COPE]. For all general enquiries contact Secretary, COPE, BMJ Publishing Group Ltd.,BMA House, Tavistock Square, London WC1H 9JR United Kingdom. Email: cope@bmjgroup.com Website Enquiries ; Email: lcamp@bmjgroup.com For submitting a case to COPE, Please read COPE guidance notes on presenting a case to the committee.

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