

## **Publication Ethics:**

Academic research involves many coordinated steps and processes – appropriate study design, study execution, data collection, analysis, and publication. While going through these steps and culminating in a publication can be an exhilarating experience, one should be aware of the ethical code of conduct that binds researchers at every stage.

Publication Ethics are rules of conduct generally agreed upon when publishing results of scientific research or other scholarly work. Generally, it is a standard that protects intellectual property and forbids the re-publication of another's work without proper credit. It also forbids the use of plagiarism of another's efforts. Data and information published as original must be original. Publication Ethics is a standard of conduct that enables the researcher to act responsibly and follow a set of guidelines for conducting and publishing their research beneficial to society. It is a set of guidelines that acquaint researchers with 'does' and 'don'ts' in research and publications.

Publication Ethics is an integral part of the scientific publishing process to maintain the highest standards of publication. Journals have implemented extensive guidelines highlighting the responsibilities of editors, reviewers, and authors. These guidelines are based on the Guidelines on Good Publication Practice developed by the Committee on Publication Ethics (COPE).

Some publishers, journals, and societies have been making available ethics guidelines that they apply to their publishing. Many journal editors and publishers also subscribe to a growing body of guidelines provided by industry organizations such as the International Committee of Medical Journal Editors (ICMJE), the Committee on Publication Ethics (COPE) and the World Association of Medical Editors (WAME).

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.

### **1. COPE (Committee on Publication Ethics)**

COPE (Started in 1997) is an international body committed to educating and supporting editors, publishers, and those involved in publication ethics to move the publishing culture towards one where ethical practices become a regular part of the publishing culture.

Its members are primarily editors but also publishers and related organizations and individuals. It approaches in the direction of influencing through education, resources, and support of its members, alongside fostering professional debate on the broader community.

It has the purpose of ensuring ethical practices become part of publishing culture. It provides eLearning courses to its members for practical guidance on plagiarism, falsification, authorship, conflicts of interest, and misconduct.

Over 20 years, COPE has grown to support members worldwide from all academic fields and developed Core Practices to guide the organization and its activities. Core practices are the policies and practices for journals and publishers to reach the highest

standards in publication ethics.

COPE's mission is built around three core principles:

- providing practical resources to educate and support its members
- providing leadership in thinking on publication ethics
- offering a neutral, professional voice in current debates

## 2. **Core Practices (Code of Conduct)**

The Core Practices were developed in 2017, replacing the Code of Conduct. They apply to all scholarly publishing literature: editors and their journals, publishers, and institutions. The Core Practices should be considered alongside specific national and international codes of conduct for research and are not intended to replace these.

Journals and publishers should have robust and well described, publicly documented practices in all of the following areas for their journals:

### **Allegations of misconduct**

Journals should have a clearly described process for handling allegations; however, they are brought to the journal's or publisher's attention. Journals must take allegations of misconduct pre-publication and post-publication seriously, and policies should include how to handle allegations from whistleblowers.

### **Authorship and contributorship**

Clear policies should be in place for requirements for authorship and contributorship and processes for managing potential disputes.

### **Complaints and appeals**

Journals should have a clearly described process for handling complaints against the journal, its staff, editorial board, or publisher.

### **Conflicts of interest / Competing interests**

There must be clear definitions of conflicts of interest and processes for handling conflicts of interest of authors, reviewers, editors, journals, and publishers, whether identified before or after publication.

### **Data and reproducibility**

Journals should include policies on data availability and encourage reporting guidelines and registration of clinical trials and other study designs according to standard practice in their discipline.

### **Ethical oversight**

Ethical oversight should include but is not limited to policies on consent to publication, publication on vulnerable populations, ethical conduct of research using animals, ethical conduct of research using human subjects, handling confidential data, and ethical business/marketing practices.

### **Intellectual property**

All policies on intellectual property, including copyright and publishing licenses, should be clearly described. In addition, any costs associated with publishing should be evident to authors and readers. Policies should be clear on what counts as pre-publication that will preclude consideration, and what constitutes plagiarism and redundant/overlapping publication should be specified.

### **Journal management**

A well-described and implemented infrastructure is essential, including the business

model, policies, processes, and software for the efficient running of an editorially independent journal and the efficient management and training of editorial boards and editorial and publishing staff.

#### **Peer review processes**

All peer review processes must be transparently described and well managed. Journals should provide training for editors and reviewers and have policies on diverse aspects of peer review, especially concerning adopting appropriate models of review and processes for handling conflicts of interest, appeals, and disputes that may arise in peer review.

#### **Post-publication discussions and corrections**

Journals must allow debate post-publication either on their site, through letters to the editor, or on an external moderated site, such as PubPeer. They must have mechanisms for correcting, revising, or retracting articles after publication.

### 3. **Duties of Reviewers**

#### *Contribution to Editorial Decisions*

Peer review assists the editor in making editorial decisions, and the editorial communications with the author may also assist the author in improving the paper.

#### *Promptness*

Any selected referee who feels unqualified to review the research reported in a manuscript or knows that its prompt review will be impossible should notify the editor and excuse him from the review process.

#### *Confidentiality*

Any manuscripts received for review must be treated as confidential documents, and they must not be shown to or discussed with others except as authorized by the editor.

#### *Standards of Objectivity*

Reviews should be conducted objectively. Personal criticism of the author is inappropriate, and Referees should express their views clearly with supporting arguments.

#### *Acknowledgment of Sources*

Reviewers should identify relevant published work that the authors have not cited. Any statement that an observation, derivation, or argument had been previously reported should be accompanied by the relevant citation. A reviewer should also call to the editor's attention any substantial similarity or overlap between the manuscript under consideration and any other published paper of which they have personal knowledge.

#### *Disclosure and Conflict of Interest*

Privileged information or ideas obtained through peer review must be kept confidential and not used for personal advantage. Reviewers should not consider manuscripts with conflicts of interest resulting from competitive, collaborative, or other relationships or connections with any of the authors, companies, or institutions connected to the papers.

### 4. **Duties of Authors**

#### *Reporting standards*

Authors of reports of original research should present an accurate account of the work performed and an objective discussion of its significance. Underlying data should be represented accurately in the paper, and a paper should contain sufficient detail and refer-

ences to allow others to replicate the work. Fraudulent or knowingly inaccurate statements constitute unethical behavior and are unacceptable.

***Data Access and Retention***

Authors are asked to provide the raw data in connection with a paper for editorial review and should be prepared to provide public access to such data (consistent with the ALPSP-STM Statement on Data and Databases), if practicable, and should, in any event, be prepared to retain such data for a reasonable time after publication.

***Originality and Plagiarism***

The authors should ensure that they have written entirely original works, and if the authors have used the work and/or words of others, this has been appropriately cited or quoted.

***Multiple, Redundant, or Concurrent Publication***

An author should not publish manuscripts describing essentially the same research in more than one journal or primary publication. Submitting the same manuscript to more than one journal concurrently constitutes unethical publishing behavior and is unacceptable.

***Acknowledgment of Sources***

Proper acknowledgment of the work of others must always be given. Authors should cite publications that have been influential in determining the nature of the reported work.

***Authorship of the Paper***

Authorship should be limited to those who have contributed to the conception, design, execution, or interpretation of the reported study. All those who have made significant contributions should be listed as co-authors. Where others have participated in certain substantive aspects of the research project, they should be acknowledged or listed as contributors. The corresponding author should ensure that all appropriate co-authors and no inappropriate co-authors are included in the paper. Also, all co-authors have seen and approved the final version of the paper and have agreed to its submission for publication.

***Hazards and Human or Animal Subjects***

If the work involves chemicals, procedures, or equipment with any unusual hazards inherent in their use, the author must identify them in the manuscript.

***Disclosure and Conflicts of Interest***

All authors should disclose in their manuscript any financial or other substantive conflicts of interest that might be construed to influence the results or interpretation of their manuscript. All sources of financial support for the project should be disclosed.

***Fundamental errors in published works***

When an author discovers a significant error or inaccuracy in his/her published work, the author must promptly notify the journal editor or publisher and cooperate with the editor to retract or correct the paper.

**5. WAME (World Association of Medical Editors)**

Founded in 1995, WAME (pronounced “whammy”) is a 501(c)(3) nonprofit voluntary association of editors of peer-reviewed medical journals from countries throughout the world who seek to foster international cooperation among and education of medical journal editors.

## 6. **ICMJE (International Committee of Medical Journal Editors)**

The ICMJE is a small working group of general medical journal editors whose participants meet annually and fund their work on the Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals.

The current members of the ICMJE are Annals of Internal Medicine, British Medical Journal, Bulletin of the World Health Organization, Deutsches Ärzteblatt (German Medical Journal), Ethiopian Journal of Health Sciences, JAMA (Journal of the American Medical Association), Journal of Korean Medical Science, المجلة الطبية التونسية (Medical Tunisia), Nature Medicine, New England Journal of Medicine, New Zealand Medical Journal, PLOS Medicine, The Lancet, Revista Médica de Chile (Medical Journal of Chile), the U.S. National Library of Medicine, and the World Association of Medical Editors.

## 7. **Conflict of interest**

Conflict of interest is when the aims of two parties are incompatible, or a person is in a position to derive personal benefits from actions or decisions made in their official capacity. There is a conflict between personal interest and professional capacity, and a secondary interest unduly influences the primary interest. Conflict of interest by itself does not equate to misconduct in performing research. Actual misconduct involves fabrication, falsification of data, or plagiarism. However, conflict of interest can introduce more subtle forms of bias, such as formulating the research question, study design, data analysis, and presentation of the findings.

The author and reviewer's strategies include avoiding potential conflict, disclosing fully, and recusing oneself if a decision needs to be made to address a conflict of interest. Full disclosure of conflict of interest does not give someone a license to engage in unethical behavior. One cannot fall back on the disclosure's argument forewarned the readers or audience. To this end, greater transparency in disclosure is essential. Investigators should not only list all the entities with which they have relationships but also define the nature of those relationships. The authors should disclose all their relationships, not just the ones they feel are relevant. Readers should decide for themselves whether the conflicts of interest are relevant. Regardless of transparent disclosure, the investigators of a study have a responsibility to conduct their studies in a rigorous scientific manner. Peer reviewers must do the same, even if they lose some personal benefits, financial or otherwise.

## 8. **Publication Misconduct**

Publication misconduct is one of the serious problems in connection with the research ethics which arise due to disrespect of intellectual property right of others who genuinely working for raising the academic and living standards. It includes plagiarism, fabrication, falsification, inappropriate authorship, duplicate submission/multiple submissions, overlapping publication, and salami publication.

1. **Plagiarism:** Plagiarism is the adoption of another person's thoughts, ideas, data, figures, research methods, or words without giving proper credit to the work, or the over-citation of an-

other person's published work. Plagiarism is the failure to ensure accurate citations which refers to 'the use of someone else's ideas or words without properly acknowledging the source, turning in an assignment verbatim for a class that you've already used for another class, borrowing ideas or work from others, and cutting and pasting information from a site without citation of the source. When one person takes the credit for the original ideas or thoughts of someone else is called plagiarism.

The Harvard Guide to Using Sources divides plagiarism into six categories:

(i) **Verbatim plagiarism**: this is given when the writer copies word by word in an academic paper.

(ii) **Mosaic plagiarism**: that occurs when the writer copies pieces of information from a source or different sources and changes some words of the original one without paraphrasing or quoting properly.

(iii) **Inadequate paraphrasing**: this is given when the writer does not use his/her own words to relate the information or when his/her words are very similar to the source.

(iv) **Uncited paraphrase**: this occurs when the writer uses his/her own words to describe another writer's ideas, but the former does not cite the latter.

(v) **Uncited quotation**: this happens when the writer uses quotation marks but does not credit the author of that source.

(vi) **Using material from another's work**: this occurs when a student uses ideas that were given in discussions in groups and do not cite the group or classmate in a footnote.

To avoid plagiarism, researchers should adhere to proper citations and referencing to give credit to the original author and articles they cite. Text matching software, such as Turnitin or Orkund can be of help, up to a point, in checking for potential plagiarism.

**2. Fabrication**: Without properly performing the research work, if a researcher is manipulating the data and result, it is called fabrication. It will mislead the readers about the findings.

**3. Falsification**: Falsification is the practice of changing data or results intentionally such that a misleading conclusion is drawn. It is the changing or omission of research results to support claims, hypotheses, and other data. It includes the manipulation of research instrumentation, materials, or processes. Manipulation of images or representations in a manner that distorts the data or reads too much between the lines can be considered falsification. Fabrication and falsification of data are considered one of the most common unethical behaviors. Falsification of data includes: data creation, selective publication of results, the omission of conflicting data, and the conscious exclusion or modification of data.

**4. Inappropriate authorship**: Authorship is not appropriately assigned based on the author's contributions. The person who takes intellectual responsibility for the research results is called the author. Authorship is the process of deciding whose names belong on a research paper. In many cases, research evolves from collaboration and assistance between experts and colleagues. Some of this assistance will require acknowledgment and some will require joint authorship. Responsible authorship practices are an important part of the research. Reporting and analyzing results is the key to applying research findings to the real world. Despite its vital role, authorship remains a murky and vague area for many scientists who frequently run into

difficulty when deciding which colleagues should be listed as authors or co-authors, and which colleagues should instead receive an acknowledgment. Despite the challenges, researchers should familiarize themselves with proper authorship practices to protect their work and ideas while also preventing research fraud.

**5. Duplicate submission/multiple submissions:** Duplicate submission/multiple submissions refers to the practice of submitting the same manuscript or several manuscripts with minor differences (e.g., differences only in title, keywords, abstract, author order, author affiliations, or a small amount of text) to two or more journals at the same time, or submitting to another journal within an agreed or stipulated period.

**6. Overlapping publication:** Overlapping publication refers to the practice of publishing a paper that overlaps substantially with one already published.

**7. Salami publication:** Salami publication refers to the practice of slicing data from a large study, could have been reported in a single paper, into different pieces and publishing them in two or more articles, all of which cover the same population, methods, and question.

**8. Text recycling /Self-plagiarism:** Text recycling involves reproduction in part or whole of one's own previously published work without adequate citation and proper acknowledgment that is republishing the same paper already published elsewhere without full citation. Breaking up a longer or larger study into small sections and publishing them altogether new work without due or full citation is also called self-plagiarism. It includes **paraphrasing** one's own previously published work without due or full citation of the original. In research, it is not assured that all the hypotheses drawn will give positive results. Some researchers sometimes intentionally omit the negative results and only publish positive results.

**9. Data dredging or data snooping:** A large amount of data are available in the information industry and it is increasing on day to day basis and the data is undergoing different process such as data cleaning, data integration, etc. the practice of data mining technique to show misleading results is called data dredging or data snooping is essentially a problem of multiple interfering.

## **STEPS TO AVOID PUBLICATION MISCONDUCT**

### **1. Provide academic freedom**

One method to avoid publication misconduct is providing academic freedom to academics and thereby knowledge creation and dissemination will properly take place. Academic freedom refers to the independence and autonomy given to academics to teach and conduct research in any capacity without being constrained by rules and regulations, thereby allowing them to discover and disseminate newly found ideas regardless of their sensitivity. This will enable them to work without the interference of other individuals, authorities, and the government. They

should also have the right to publish and communicate the conclusions of the research which they have authored or co-authored. This resonates with the very notion of education in the words of John F. Kennedy; 'the goal of education is the advancement of knowledge and the dissemination of truth'.

2. **Follow ethical principles**

Every researcher should be aware of ethical issues and the consequences of these issues. These issues can be reduced or overcome by providing awareness and following ethical principles. The following is a rough and general summary of some ethical principles that various codes address

a) **Honesty**: Strive for honesty in all scientific communications. Honestly report data, results, methods and procedures, and publication status. Do not fabricate, falsify, or misrepresent data and do not deceive colleagues, granting agencies, or the public.

b) **Objectivity**: Strive to avoid bias in experimental design, data analysis, data interpretation, peer review, personnel decisions, grant writing, expert testimony, and other aspects of research where objectivity is expected or required. Avoid or minimize bias or self-deception.

c) **Integrity**: Keep your promises and agreements; act with sincerity; strive for consistency of thought and action.

d) **Carefulness**: Avoid careless errors and negligence; carefully and critically examine your work and the work of your peers. Keep good records of research activities, such as data collection, research design, and correspondence with agencies or journals.

e) **Openness**: Share data, results, ideas, tools, resources. Be open to criticism and new ideas.

f) **Respect for Intellectual Property**: Honor patents, copyrights, and other forms of intellectual property. Do not use un-published data, methods, or results without permission. Give proper credit or acknowledgment for all research contributions. Never plagiarize.

g) **Confidentiality**: Protect confidential communications, such as papers or grants submitted for publication, personnel records, trade or military secrets, and patient records.

h) **Responsible Publication**: Publish to advance research and scholarship, not to advance just your career. Avoid wasteful and duplicative publication.

i) **Responsible Mentoring**: Help to educate, mentor, and advise students. Promote their welfare and allow them to make their own decisions.

j) **Respect for colleagues**: Respect your colleagues and treat them fairly.

k) **Social Responsibility**: Strive to promote social good and prevent or mitigate social harms through research, public education, and advocacy.

l) **Non-Discrimination**: Avoid discrimination against colleagues or students based on sex, race, ethnicity, or other factors that are not related to their scientific competence and integrity.

m) **Competence**: Maintain and improve your professional competence and expertise through lifelong education and learning; take steps to promote competence in science as a whole.

n) **Legality**: Know and obey relevant laws and institutional and governmental policies.

o) **Animal Care**: Show proper respect and care for animals when using them in research. Do not conduct unnecessary or poorly designed animal experiments.

3. Self-certification of articles should be made when they are submitting for publication.
4. Report of plagiarism checking software should be made compulsory.
5. The theses or dissertations should compulsorily be uploaded to Shodh-Ganga.



6. Authors of different articles should keep their publications on institutional repositories.
7. Do not give unnecessary focus on publishing and journal impact factors.

## **9. Predatory Publishers and Journals**

Predatory publishers and journals—also called fraudulent, deceptive, or pseudo-journals—are publications that claim to be legitimate scholarly journals but misrepresent their publishing practices. Standard predatory publishing practices include

- falsely claiming to provide peer review,
- hiding information about Article Processing Charges (APCs),
- misrepresenting members of the journal’s editorial board, and
- violations of copyright or scholarly ethics.

These predatory publishers are dishonest and lack transparency, and they aim to dupe researchers, especially those inexperienced in scholarly communication.

The main goal of predatory journals is profit. They attempt to deceive authors into publishing for a fee without providing robust peer-review or editorial services, thereby putting profit over trustworthy and dependable science. For many, career progression depends on publishing, so one may look for journals that promise to publish all submissions.

### **Common Practices of Predatory Journals**

- Claims to be a peer-reviewed open access publication but does not provide adequate peer review or the level of peer review promised (some predatory journals repeatedly use a template as their peer review report).
- Advertises a Journal Impact Factor or other citation metrics on the website that is incorrect or cannot be verified.
- May advertise an unrealistic timeline for publication.
- Publishes all articles for which authors pay an APC (Article Processing Charges) even if the article is low quality, unrelated to the topic of the journal, or nonsensical.
- Publishes articles with many grammar mistakes (little or no copyediting).
- Editorial board includes people who do not exist, do not have credentials relevant to the topic of the journal, and have affiliations that cannot be verified or are real people who are not aware that they are listed as members.
- Mimics name or website of other well-known legitimate journals.
- Aggressively targets potential authors through emails.
- May state that offices are in one country, but contact details are in another.
- Solicitation emails contain grammatical errors of phishing scams.
- Lack of transparency about the acceptance process or APCs, so authors do not know how much they will be charged until their article is accepted.
- Requires authors to sign away their copyright to the article at submission, making it impossible for the author to submit the article to another publisher.
- Publishes articles submitted before the authors have signed the publishing agreement and then refuses to take the article down if the author withdraws the submission.
- Removes articles or entire journals from the web without warning or informing authors.

### **Tips to Determine if a Journal or Publisher is Predatory**

- Are there spelling or grammatical mistakes or other questionable characteristics on their website or in the solicitation email?
- Is the peer review process clearly stated on the website?
- Does the website clearly state the publishing fees?
- Is the journal indexed in databases such as SCI/SCIE, Scopus, UGC-care list, Web of Science, MathSciNet, PubMed, MEDLINE, and other indexed or citation databases?
- Can anyone quickly contact the publisher?
- Are the time-stamps of incoming emails consistent with the working hours of the reported country of origin?
- Does the phone number have the correct country code?
- Is the journal a member of the Committee on Publication and Ethics (COPE) or Open Access Scholarly Publishers Association (OASPA), or listed in the Directory of Open Access Journals (DOAJ)?

### **Some Predatory Journals:**

- International Journal of Mathematical Archive (IJMA)
- International Journal of Mathematical Research & Science (IJMRS)
- International Journal of Mathematical Sciences & Applications (IJMSA)
- International Journal of Mathematics And Computer Research (IJMCR)
- International Journal of Mathematics and Soft Computing (IJMSC)
- International Journal of Mathematics and Statistics Invention (IJMSI)
- Journal of Mathematics and Technology (JMT)
- Mathematical and Computational Applications (MCA)

### **10. Possible causes of Unethical Behavior**

- Desire to see voluminous curriculum vitae.
- Need for promotions and academic development.
- The desire for Grant Sanctioning.
- Competition among colleagues.
- To prove professional supremacy.
- To become guide internal/external or external examiners.
- Adding the authorship to seniors or family members.
- A person who uses his position of authority to be included as an author regardless of not being thus qualified is referred to as pressured authorship is called **Pressurized authorship**.