The Ingeniería & Investigación journal defines the following criteria and recommendations regarding publication ethics:

1. General Criteria

   a) Articles must contain sufficient details and references which allow replicating or refuting the study.
   b) Fraudulent or deliberately inaccurate statements constitute poor ethical behavior.
   c) If the study includes chemical products, procedures, or equipment with any unusual risks inherent to their use, the author must clearly identify them.
   d) If the study involves the use of animals or human beings, the author must make sure that the article contains a statement which makes explicit that all procedures were carried out in compliance with the law and institutional guidelines.
   e) Human beings’ right to privacy must be respected.

2. Authorship

   Criteria:

   a) An author is a person who has made a significant intellectual contribution to the article. Therefore, every person who is mentioned as an author must meet the authorship requirements, and everyone who meets them must be explicitly mentioned.
   b) Three basic criteria must be collectively met to be recognized as an author:

      I. A substantial contribution to the study’s conception, design, data acquisition, analysis, and interpretation.
      II. Drafting or revision of the intellectual content.
      III. Approval of the final version.

   c) Author order must be a collective decision of the authors.
d) People who participate in a study but do not adjust to authorship criteria must be mentioned as collaborators or acknowledged persons.

e) There are three types of authorship that are deemed unacceptable: a ghost author who makes a substantial contribution but is not acknowledged; a guest author who does not make any visible contribution but is mentioned to improve the chances of publication; and honorary authorships, which are only based on a loose affiliation to a study.

Recommendations:

f) Prior to the start of the research, it is advised to document the form and function in which authorship of each researcher will be recognized.

g) There should be no lie regarding the participation of a person in the research or publication; if their contribution is considered to be substantial, their authorship is justified, be it as author or collaborator.

h) Authorship must not be assigned without the person’s consent.

i) Some groups mention their authors in alphabetical order, with a note explaining that all of them made equal contributions to the study and publication.

3. Changes in authorship

Criteria:

a) This refers to the addition, removal, or reorganization of author names in an accepted article.

b) Requests to add or remove an author, or to reorganize their names, must be sent by the corresponding author of the accepted article and must include:

I. The reason why an author must be added or removed.
II. Written confirmation (via e-mail) from all authors agreeing to the addition, suppression, or reorganization. In the case of author addition or removal, this includes confirmation that the author will be added or removed.

4. Conflict of interest

Criteria:

a) When a researcher or author has any opinion or financial/personal interest that may affect their objectiveness or inappropriately influence their acts, there is a possible conflict of interest. This kind of conflict may be real or potential.

b) The most evident conflicts of interest are financial relationships, such as:
I. Direct: employment, stock ownership, scholarships, patents…
II. Direct: fees, advising promoter organizations, investment fund ownership, paid expert testimony.

c) Conflicts may also arise as the result of personal relationships, academic competence, and intellectual passion. For instance, in a researcher who has:

I. Some kind of personal interest in the research results.
II. Opinions directly conflicting with the subject under research.

Recommendations:

d) To inform whether there is some real or potential conflict of interest that inappropriately influences the findings or results of the submitted work, within the first three (3) following its commencement.
e) To inform about the role of a promoter(s) of the study, if there is any, at any stage of the work.
f) Authors must not come to any agreement that interferes with their access to all data and their ability to analyze them independently, as well as preparing and publishing their manuscripts.
g) When submitting the document, a statement must be made (with “Funding” as headline) in a separate section of the text, which must be placed before the reference section.
h) Some examples of possible conflicts of interest that must be disclosed include employment, advisership, stock ownership, fees, paid expert testimony, patent requests/records, subsidies, and other kinds of funding.
i) All sources of financial support for the project must be disclosed.
j) The sponsor’s role in the study must be described.

5. Duplicate publication

Criteria:

a) Authors must verify that their article is based on original research (never before published). Deliberate submission or resubmission of their work to a duplicate publication is considered an infringement of editorial ethics. Publication or distribution on the Internet may be considered as prior publication and may compromise the originality of the article. However, we allow publishing of articles in non-commercial pre-print repositories.
b) A duplicate or multiple publication is produced when two or more articles, without referencing each other, essentially share the same hypotheses, data, discussion points, and/or conclusions. This may occur in different degrees: literal duplication, partial but substantial duplication, or even duplication through paraphrasing.
c) One of the main reasons why duplicate publication of original research is considered unethical is because it may give way to an
inadequate ponderation or to a double involuntary recount of the results of a unique study, which distorts available proof.

Recommendations:

d) Articles submitted for publication in the Ingeniería & Investigación journal should be original and must not have been sent to another publisher. At the time of submission, authors will have to reveal the details of the related articles (even when they are written in another language), similar published articles, and translations. At the time of application, authors must notify the journal whether their article has been previously published in any pre-print repository, as well as providing its link.

e) Even though a submitted article is undergoing revision, and its status is unknown to you, wait for the publisher to inform you about its status before submitting it for another publication, and only if the other publisher will not publish the article.

f) Avoid submitting an article previously published in another journal.

g) Avoid submitting articles that essentially the same research to more than one journal.

h) Always notify previous submissions (continuity of the paper) which may regarded as a duplicate publication.

i) Avoid writing about your own research from different angles or on different aspects in two or more articles without mentioning the original paper.

j) Creating several versions based on the same research is considered manipulative.

k) If you wish to submit an article to a journal that will be published in a different country or in a different language, ask the publisher.

l) At the time of submission, notify all details about related articles in a different language, as well as existing translations.

6. Acknowledgement of the sources

Criteria:

a) Authors must cite publications that have influenced the determination of nature of the submitted work.

b) Privately obtained information must not be used without explicit authorization in written form from the source.

c) Reutilization of tables and/or figures require permission from the editor and the author, who must be adequately mentioned in the table or figure’s legend.
7. Scientific fraud

Criteria:

a) A fraud in scientific publication refers to the submission of false data or conclusions that were not generated through a strict research process.
b) The are following types of fraud in the publication of research results:

I. Data fabrication: inventing data and results to later communicate them.
II. Data falsification: manipulating research materials, images, data, equipment, or processes. Falsification includes the modification or omission of results in such a way that the research is inaccurately presented. A person could falsify data to adjust them to the desired final result of a study.

Recommendations:

c) Before submitting an article, read the journal’s data and editorial policies carefully.
d) Never modify, change, or omit data deliberately. This includes research materials, processes, equipment, tables, citations, and bibliographical references.
e) Both the fabrication and falsification of data are forms of serious malpractice since they do not accurately reflect the research results.
f) The author must adequately manage the data supporting the research, with special care for the collection, production, conservation, analysis, and communication of data.
g) A thorough record of the raw data must be kept. These data must be accessible in case the editor requires them, even after having published the article.

8. Plagiarism

Criteria:

a) Plagiarism is one of the most common forms of malpractice in publications. It occurs when one of the authors submits the work of another as their own without the author’s authorization, mention, or acknowledgement. Plagiarism takes place in different forms, from literal copy to paraphrasing of another person’s work, including data, ideas, concepts, words, and phrases.
b) Plagiarism has different levels of seriousness, for example:

I. What amount of another person’s work was taken (several lines, paragraphs, pages, the whole document)
II. What was copied (results, methods, or introduction sections)
c) Plagiarism, in all its forms, constitutes unethical conduct and is unacceptable.
d) Literal copy is only acceptable if the source is indicated, and the copied text is written between quotation marks.

Recommendations:

e) Always remember that it is essential to acknowledge the work of others (including the work of your adviser or your own prior work) as part of the process.
f) Do not reproduce any work word by word, partially or in its entirety, without authorization from or mention of the original source.
g) Maintain a record of the sources you use while doing research, as well as the place in your article in which you used them.
h) Make sure that you fully acknowledge and adequately cite the original source in your article (if you have the DOI, use it).
i) Even when you reference the source, avoid using other people’s work word by word unless between quotation marks.
j) Paraphrasing is only acceptable if you correctly indicate the source and make sure not to change the meaning or intent of the source.
k) Cite all contents you have taken from a previously published source in quotation marks, even if you are saying it in your own words.

9. Fragmentation

Criteria:

a) Fragmentation consists of dividing or segmenting a large study in two or more publications.
b) It is generally not acceptable that the fragments of a divided study share the same hypothesis, population, methods, or data.
c) The same fragment must not ever be published more than once. The reason for this is that fragmentation may give way to a distortion of the literature, thus making readers mistakenly believe that the data presented in each fragment (that is, journal article) are derived from a different sample of subjects. Not only does this skew the scientific database, but it creates repetition, which wastes the time of the editors and revisers, who must take in each work separately. Furthermore, the number of references where the author is cited is unfairly inflated.

Recommendations:

d) Avoid inappropriately dividing the data of a single study in two or more works.
e) When you submit a paper, be transparent. Send copies of the manuscripts that are closely related to the manuscript in question. This includes published, recently submitted, and already accepted manuscripts.
10. Informed consent

Criteria:

a) Studies on patients or volunteers require the approval of an ethics committee.

b) The informed consent must be duly documented.

c) Permissions and releases must be obtained when an author wishes to include case details or any other personal information or images of the patients or any other person.

11. Correction of published articles

Criteria:

a) When an author discovers an error or significant inaccuracy in a published work, it is their obligation to immediately notify the journal and cooperate with the correction process.

b) When an author or group of authors commit a serious infringement of the ones listed in this document, such as plagiarism, publication duplicity, scientific fraud, fragmentation, source misuse, and uninformed consent…, the editorial committee of the Ingeniería & Investigación journal, for legal purposes, will take the necessary measures through the legal office of the Universidad Nacional de Colombia.

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