Misconduct in Research and Scientific Publication

A Paper Presented at the First Conference of the Faculty of Applied Sciences, Koladaisi University

Odaibo, A. B.
Department of Zoology, University of Ibadan, Ibadan alexodaibo@yahoo.com

Abstract
This paper presents a review of frequent misconducts associated with research and the publication of research findings, which unfortunately, has been on the rise despite the increased awareness of the problem and the negative impact it has on the individuals and the scientific community. The pressure to publish has led to various forms of "shortcuts" in research designs and publications. This paper is aimed at whetting the appetite of young scientists and academicians towards taken steps to avoid misconduct and dishonest practices in their desires to develop and progress in their career. The paper presents some of the common practices that constitute misconduct in our research efforts and in reporting research findings.

Keyword: Research misconduct; publication misconduct; unethical practices; honest error; predatory publication.

Introduction

Scientists and academic researchers are often under great pressure to publish large number of research or review articles for the purpose of promotion or prestige. The pressure very often misleads young or less experienced researchers to take "shortcuts" that may consequently mislead them into practices that are generally regarded as misconduct [1].

Today the old adage "publish or perish" remains valid, hence there is the desire to produce scientific publications to enhance career prospects, or to substantiate request for funding allocations, or as a requirement for university qualifications, such as a master's degree or doctoral thesis [2]. Researchers in Nigeria perceive that scientific misconduct is commonplace in their institutions and are worried about the negative effects of scientific misconduct on the credibility of scientific research [3]. But very little or no efforts are directed and sustained towards preventing the increasing incidence of research and publication misconduct. Particularly, as the global incidence of scientific misconduct has considerably increased in recent years [4, 5].

It is therefore important that we always remind ourselves of some of the basic rules of transparency, and features of good research designs so as to avoid and prevent misconduct acts. The purpose of this paper is to remind us of some common practices that constitute misconduct in our research efforts or in reporting our research findings.

1. What is Research?

Research is a careful investigation or inquiry, through scientific methods, aimed at searching new facts or verification of established facts under various situations. A good research culture will demonstrate honesty and integrity, address credible research questions, respect human research participants, animals, and the environment. Good research will also appropriately acknowledge the role of others in research, provide good stewardship of public resources used to conduct the study and of course ensure responsible communication of research results [6].

Research Misconduct

Research misconduct as generally defined as fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results. **Fabrication** is making up data or results and recording or reporting them; while **falsification** is manipulating research materials, equipment, or processes, or changing or omitting data or results such that the research is not accurately represented in the research record. **Plagiarism** is the appropriation of another person's ideas, processes, results, or words without giving appropriate credit. There are several definitions of misconduct, but they all include fabrication, falsification, and plagiarism [7, 8].

There are some other unethical practices in research that are generally not regarded as misconduct, these include, conducting research without ethical approval, risking the safety of human participants, or the wellbeing of animals or the environment, failure to declare or manage serious conflicts of interest, misrepresentation of qualification and/or experience, including claiming or implying qualifications or experience which are not held and breach of confidentiality.

Honest Error in Research

Scientific results are susceptible to errors, and they may arise from human fallibility. Such errors are regarded as honest errors. However, such errors should be immediately acknowledged when they are discovered. Very often, if a researcher produces incorrect results out of negligence, carelessness or inattention, it is not considered misconduct. For misconduct to be alleged, the behaviour must be committed intentionally, or knowingly or recklessly [9].

Consequences of Misconduct

Misconduct in research tarnishes the reputation of researchers, institutions and has the potential to diminish the credibility and integrity of research in general [3]. It jeopardises the belief in science [5], and above all, it can harm individuals outside the scientific community and cause wastages of public funds.

1. Publication

This is the act of making information/findings known. In order for the results of research to be accessible to other professionals and have a potential effect on the greater scientific community, it must be written and published [10]. The communication of research findings to scientific communities and policy makers enhances development. Scientific writing therefore demands clarity, conciseness, accuracy, and integrity. There however, some barriers to effective writing and these include, lack of experience, poor writing habits, writing anxiety, unfamiliarity with the requirements of scholarly writing, lack of confidence in writing ability, fear of failure, and resistance to feedback [11]. In addition to these pitfalls, is the poor/inappropriate data collection, hence the recourse to dishonest practices.

Misconduct in Publication

The pressure to publish for promotion or visibility in scientific community, often leads to some unethical practices and misconduct in writing. These include unethical practices in authorship, and plagiarism, which has been classified as misconduct. Moreso, the obsession for publishing large number of articles leads some authors to distort reality and forget what a scientific article is, and they list all types of publications in their Researcher ID as articles [5].

Who is an Author?

Authorship is an important aspect of any publication; it provides credit to those who did the work, as well as accountability for any error. It is a fundamental issue in academia, as it is used to measure the research output of each faculty member and in most cases used as the basis for individual promotion or salary increase [12]. An author must make substantial scholarly contribution to the project and be able to take responsibility for the part contributed. The contribution can be in conceiving, designing, or planning the research. It can also be in acquiring, analysing, or interpreting the primary data; or drafting and revising the article reporting the research in question.

Unethical Practices in Authorship

Some of the common unethical practices in authorship include the following: Taking personal credit as sole author for collaborative work. This is common with young investigators publishing from joint works without giving any credit to their collaborators as co-authors or even acknowledging the contributions of others, including their supervisors/principal investigator/mentor. Another common unethical practice is giving credit as authors to some individuals that did not participate in the work or in writing the publication. It is generally referred to as "Gift, Guest or Honorary". Gift/Guest/Honorary authorship is when an individual is listed as an author who has not made any intellectual contributions to the work. It takes credit away from those who did the work, and it can also implicate the guest author if there is a problem. In addition, giving credit to individuals as authors without their permission is unethical, as they may disagree with the contents of the publication.

There is also the practice of not acknowledging the contribution of a writer, known as ghost writer in "Ghost authorship". This is when a "ghost-writer's contribution to a publication is not acknowledged in the final production. It can be used to obscure potential conflict of interest in research. Perdigao (2019) described another seemingly subtle unethical practice as "Mutual support authorship" in which different teams of researchers agree to place everyone's names in each other's manuscript to inflate the productivity of all teams.

Misconduct in Publication

Plagiarism is the most widely recognized misconduct in scientific writing. Plagiarism refers to the act of "appropriation of another person's ideas, processes, results, or words without giving appropriate credit" [7, 13, & 9].

Plagiarism can be classified into two categories:

Plagiarism of ideas – Appropriating an idea (e.g., an explanation, a theory, a conclusion, a hypothesis, a metaphor) in whole or in part, or with superficial modifications without giving credit to its originator.

Plagiarism of text (verbatim) – Copying a portion of text from another source without giving credit to its author and without enclosing the borrowed text in quotation marks [7].

Types of Plagiarism of Text

Mosaic plagiarism (Patchwork plagiarism) – This is when text is lifted from a few different sources and put together to create the impression of new text.

Self-plagiarism (text-recycling) – This is redundant reuse of your own work (text, data, and images), without proper citation or letting the readers know that this material has appeared elsewhere. There are two forms of self-plagiarism:

Redundant/duplicate publication – publishing what is essentially the same information/data in more than one outlet; and Salami slicing (salami publication)-the segmentation or fragmentation of a large study which should have been reported in a single paper into two or more smaller publications.

Other forms of inappropriate practices in publication include:

Carelessness in citing references,

Citation Stuffing – when authors intentionally cite their own articles, regardless of their relevance, in an attempt to raise their own articles 'citation index' and 'impact factor' and citing references that were not read. Predatory Academic Practices (PAP) - These practices exploit the need and sincere eagerness of researchers to publish or increase exposure of the work. They include "Predatory publishing/ predatory journals". Predatory Journals are driven by self-interest, usually financial, at the expense of scholarship. Predatory Journals are characterized by the following: False misleading information, fake/ predatory impact factors, incorrect addresses, misrepresentations of the editorial board, false claims of indexing and false claims about the rigour of peer-review [9, 14].

Conclusion

It is very difficult to recover from verified academic dishonesty [5]; but it is easier to avoid the pitfalls of dishonest behaviours that currently affect scientists and society. Greater commitment is required from every scientist and researcher to always follow the path of honour in the design, and execution of our studies and the ultimate publication of our findings, bearing in mind that misconduct affects the credibility of science, and it erodes public trust in its research outcomes.

References

[1] Alfaro-Nunez A, Deceiving scientific research, misconduct events are possibly a more common practice than foreseen, *Environmental Science Europe*, 34, 2022, 76-80.

[2] Ecarnot F, Seronde MI, Chopard R, Schiele F, Meneveau N, Writing a scientific article: A step-by-step guide for beginners, *European Geriatric Medicine*, 6, 2015, 573-579.

[3] Okonta PI, Rossouw T, Misconduct in research: a descriptive survey of attitudes, perceptions, and associated factors in a developing country. *BMC Medical Ethics* 15, 2014, 25-32.

[4] Fang FC, Steen R.C., & Casadevall, A. (2012). Misconduct accounts for the majority of retracted scientific publications PNAS, 109, 16751-16752. Doi: 10.1073/iti4212109.
[5] Buela-Casal G. (2014). Pathological publishing: A new psychological disorder with legal consequences? *The European Journal of Psychology Applied to Legal Context* 6: 91-97.
[6] National Health and Medical Research Council (2018). Australian Code for
[7] Responsible Conduct of Research. https://www.nhmrc.gov.au/publications/australian-code-responsible-conduct-research-2018
[8] Roig, M. (2002). Avoiding plagiarism, self-plagiarism, and other questionable writing practices: A guide to ethical writing. In proceedings of the ORI Research Conference on Research Integrity. Office of Research Integrity, pp.1-63.
[9] National Academics of Sciences, Engineering, and Medicine. (2017). Fostering Integrity in Research. Washington, DC: The National Academics Press. https://doi.org/10.17226/21896
[10] COPE Council (2019). COPE Discussion Document: Predatory Publishing. https://doi.org/10.23418/cope.2019.3.6
[11] Hoogenboom, B.J. and Manske, R.C. (2012). How to write a scientific article. *Int. J. Sports Phys Ther.* 7(5): 512-517.
[12] Witt P.A. (1995). Writing for publication: Rationale, process, and pitfals. *J. Park Recreation Admin*. 13 :1 – 9.
[13] Perdigao J. (2019). What is authorship? *The Journal of Adhesive Dentistry* 21 (2): 103-104
[14] Habibzadeh, F. and Shashok, K. (2011). Plagiarism in scientific writing: words or ideas? *Croat Med J.* doi:10.3325/cmj.2011.52.576.
[15] Grundneiwicz, A., Moher, D., Cobey, D.C. (2019). *Predatory Journals: No definition, no defence*. *Nature* 576, 210-212. https://doi.org/10.1038/d41586-019-03759-y