**Plagiarism: An Egregious Form of Misconduct**

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Abstract

**Background:** Publishing research papers for academic fraternity has become important for career advancement and promotion. Number of publications in peer reviewed journals and subsequent citations are recognized as measures of scientific success. Non-publishing academicians and researchers are invisible to the scientific community. **Discussion:** With pressure to publish, misconduct has crept into scientific writing with the result that research misconduct, plagiarism, misappropriation of intellectual property, and substantial unattributed textual copying of another’s publication have become common. The Office of Research Integrity, USA, defines research misconduct as “fabrication, falsification or plagiarism in proposing, performing or reviewing research, or in reporting research results.” Although plagiarism is difficult to define in few words, it can be viewed as the stealing of another person’s ideas, methods, results, or words without giving proper attribution. The Office of Research Integrity defines plagiarism as being “theft or misappropriation of intellectual property and the substantial unattributed textual copying of another’s work.” Plagiarism is one of the most vehemently denied breaches of research integrity as it undermines the original and honest contribution to an existing body of knowledge. **Conclusion:** Plagiarism has many forms viz. blatant plagiarism, technical plagiarism, patchwork plagiarism, and self-plagiarism. In any form, the plagiarism is a threat to the research integrity and is unacceptable. We do need to detect such acts and effectively prosecute the offenders.

Keywords: Fabrication, Falsification, Publication ethics, Research misconduct

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**Introduction**

The process of disseminating scientific information has undergone paradigm shift over the years.[¹] Number of publications and their citations have become measures of scientist’s success. As endpoints of research, publications have become mandatory for promotions and research funding which has led to a rise in research misconduct.[²] The Office of Research Integrity (ORI), USA, defines research misconduct 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,” falsification is “manipulating research material, equipment or processes, or changing or omitting data or results such that the research is not accurately represented in the research records;” plagiarism is “the appropriation of another person’s ideas, processes, results, or words without giving appropriate credit.”[³]

The term plagiarism derives from the Latin word “plagiarus,” meaning “kidnapper” or “abductor.” Although plagiarism is difficult to define in few words, it can be viewed as the stealing of another person’s ideas, methods, results, or words without giving proper attribution.[⁴] The ORI defines plagiarism as being “theft or misappropriation of intellectual property and the substantial unattributed textual copying of another’s work.”[⁵] The Committee on Publication Ethics (COPE), UK, has defined plagiarism as “the unreference use of others published and unpublished ideas.”[⁶] Plagiarism involves the use of writings belonging to others but copying part of own previous published work, without appropriate citation is also plagiarism.[⁷] Only including the source in the references without putting the original author’s words in quotation marks is not enough and is still theft of words and ideas. Authors must be aware that using published photos, images, art work, and tables without written permission is also plagiarism. Basically,
it is an unattributed verbatim or nearly verbatim copying of sentences and paragraphs which misleads the readers regarding the contribution of the author. Plagiarism is wrong in any form whether it is the whole manuscript, or just a paragraph or even a sentence. Whether it is a cyber-plagiarism or self-plagiarism, all types are wrong and unethical. This article deals with the various prevalent forms of plagiarism, its impact on research integrity and solutions and resolutions to deal with it.

Impact on research integrity
Research integrity encompasses values of honesty, trust, respect, fairness, and responsibility.[7] Journals are an essential means of communication between scientists and thus are vital for scientific community. In scientific research, we hold great responsibility, trust, and honesty; however, those involved in medical journal publishing unfortunately observed medical publication misconduct for more often.[8,9] In a meta-analysis, it was found that medical researchers reported misconduct more frequently than respondents in other fields.[10] From 2001 to 2010, the number of manuscripts accepted by listed medical journals increased by 44%. The number of retracted papers over the same period went up 19 fold.[8] In terms of research integrity, journal editors often find themselves in the gray zone of publication ethics.

Plagiarism is one of the most vehemently derided breaches of research integrity as it undermines the original and honest contribution to an existing body of knowledge.[11] Plagiarized publications do not add to scientific value of the material published; they merely increase the quantum of published papers without justification and gain undeserved benefit to authors.[12] Plagiarism is basically intended to deceive the readers. A reviewer comment aptly states “your work is both good and original. Unfortunately the parts that are good are not original and the parts that are original are not good.”[13] Scientists as authors are regarded as people with high ethical standards and must be aware that any form of academic dishonesty including plagiarism can tarnish their image severely.

Factors responsible
Ethics in publication has been thoroughly discussed especially the substantial contribution that warrants authorship. In ethical aspects of publication, plagiarism appears prominently.[11] Over the past few years, there has been a rising trend in the plagiarized scientific literature. The prevalent culture of “publications at any cost” and “publish or perish” appears to be responsible for this.[14] Moreover, scientific merit of a person and the funding of research projects are often analyzed by number of published articles by a researcher, making this a vulnerable target for manipulation.[14] The impending negative impact of not getting published on a regular basis pushes researchers to resort unfair practices and scientists often fall prey to plagiarism.[15] Digitalization has made copy-paste plagiarism and inappropriate reuse of sources from the websites, online journals, and other electronic media widespread. Those practicing copy and paste techniques learn that searching, locating, and manipulating data available on the internet is a valuable skill. Production of original analysis and interpretation are harder work compared to easy availability of information online. Other reasons for indulgence in plagiarism are ignorance, oversight, deficient training in ethical scientific writing, lack of statutory controls and policies to deal with scientific misconduct in academics. Moreover, journal editors in spite of finding plagiarism are shy of confronting the authors. While they may be rejecting such manuscripts, they are soft on initiating the actions proposed against the plagiarists. Hence, those who are involved in plagiarism and go scot-free, become bold to perpetuate it. In India, the pressure to publish was the commonest reason (55%) which drove academicians to plagiarize and the lack of essence of writing in English (35%) was a key factor accountable for increased plagiarism.[15] Moreover, journal editors may also be responsible for the occurrence of some forms of plagiarism as they limit the length of the article which pushes authors to write additional articles.

Various forms of plagiarism
Plagiarism has many forms viz. blatant plagiarism, technical plagiarism, patchwork plagiarism, and self-plagiarism.[16] However, in any form, plagiarism tarnishes the research integrity and is unacceptable. Blatant plagiarism is an act in which the author tries to deceive the teacher/reader either for a grade or acclaim into believing that he/she is totally responsible for the content. Technical plagiarism is when author is not trying to cheat or deceive the reader but fails to follow the accepted methods of using and revealing sources. Patchwork plagiarism (mosaic writing) is taking text portion from several sources, combining them, and presenting the resulting text as one’s own work.[17] In contrast to other forms of plagiarism that can be detected by using various plagiarism detection tools and software, patchwork plagiarism is difficult to identify because of its complexity and ability to pass “below the radar” of plagiarism detection software.[16] Another form of plagiarism is self-plagiarism, which means borrowing words as a large portion of the present work from one of his/her previously published article because authors tend to think that copying from one’s own previously published writing is acceptable.[18] However, self-plagiarism is also a plagiarism and should be treated as one. Self-plagiarism has four subtypes[17]:

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a. Duplicate (redundant) publication: It occurs when an author submits identical or almost identical manuscripts to two different journals.

b. Augmented publication: It occurs when authors add additional data to already published data and submit the new manuscript with new, recalculated results often with different title and adjusted study aims. As it is not a case of verbatim word plagiarism, this type of plagiarism is difficult to detect.

c. Segmented (salami) publication: It occurs when two or more papers are derived from the same experiment. This form of plagiarism is also difficult to detect.

d. Text recycling: Using large portion of one’s own already published work in new manuscript comprises this type of plagiarism and is easily detectable by plagiarism detection tools and software.

How to avoid plagiarism?

Researchers and authors of scholarly papers should follow ethical code of good scientific practice, based on the principles of honesty and integrity. Original thought is valued highly in the scientific world and preventing plagiarism preserves its sanctity. Paraphrase and summary are the two most important ways to avoid plagiarism. Paraphrase means to express someone else’s ideas in your own language and to summarize means to write down the essence of someone else’s work. The common tips to avoid plagiarism are:

1. Acknowledge the original source of idea, text, pictures, artwork, or illustration right below it.
2. Text-copied verbatim must be enclosed within quotation marks.
3. Even when paraphrasing has been carried out, it is essential to properly acknowledge the original source.
4. If part of the own previous publication is used, it must be clearly disclosed in the covering letter to editor.
5. Written permission is required to use any published table, figure, picture, artwork.
6. If one feels that he/she has used somebody else’s idea or text unintentionally without appropriate referencing, one should immediately write to the journal editor and seek advice.
7. Before submission, run your manuscript through plagiarism check websites to avoid the embarrassment of being caught plagiarizing later.

Authors, reviewers, and editors together need to put efforts into maintaining the originality in scientific literature. There is a need to sensitize the medical community about plagiarism and academic misconduct so as to reduce its occurrence. Scientific and academic institutions should have units for monitoring research and set policies to take responsibility for research integrity. Moreover, they should educate budding researchers about the ethical practices in scientific writing.

How to deal with plagiarism?

Editorial associations, such as COPE, International Committee of Medical Journal Editors (ICMJE), and World Association of Medical Editors have given guidelines on the responsibility of journal editors when research misconduct is suspected or confirmed in published or submitted articles. Council of Science Editors in 2012 has defined misconduct and suggested how journals should treat it.

Urgent and concrete action is needed on two fronts viz. improving the knowledge of medical professionals and strengthening mechanisms to identify and weed out publication misconduct. Medical editors should not accept plagiarism and should be vigilant in taking active steps to discourage it. The COPE recommends that in case of suspected plagiarism, journals should reprimand the authors, by not accepting the offending author’s articles for a span of say 2-5 years, and by simultaneously informing their heads of department and dean of the author’s medical school. However, rather than taking such a drastic step, many editors educate their authors by just rejecting the tainted manuscript and presenting to them the evidence that there is plagiarism in their submission. Some of the plagiarism detection computer programs or softwares are Turnitin, Safe Assign, Cross Check, eTBlas, and ithenticate. These programs can actually tell the exact percentage of the manuscript that is plagiarized from a specific reference.

Actions have been proposed if the plagiarism is detected after publication. Editors should analyze the published paper and decide whether a corrected article needs to be published or retraction is required. If retraction is necessary, it should be linked to the article through medline in such a way that no electronic search can reach the unretracted form of the article. Moreover, when problems of such magnitude arise, it is the editor’s and journal’s duty to alert the author’s university/institution and the office of academic integrity or equivalent. Any retraction of paper should follow the COPE guidelines, and the authors should be given an opportunity to respond to the comments.

Academic plagiarism is on the rise for the reasons of lack of oversight, lack of proper training for scientists, lack of statutory effective regulatory body, and absence of clear policies to deal with scientific misconduct in academics. Without policies, scientific journals have to react on an ad-hoc basis to the allegations and perhaps enter into legal disputes. Hence, establishment of independent ethical body with clear policies to deal with scientific
misconduct is needed. An international database of blacklisted plagiarists should be maintained for stringent actions to be taken against them.

**Conclusion**

The scientific journal editors wrestle with the challenges of research misconduct and most agree that prevention is better than cure. Though it is doubtful that we will ever succeed in eliminating plagiarism or other forms of intentional misconduct, we need to strengthen our ability to detect such acts and effectively prosecute and punish the offenders. Punitive punishments alone have not helped, so corrective steps to check plagiarism are needed.

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