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OBTRUSIVE PLAGIARISM AND DATA FALSIFICATION IN BIOLOGICAL SCIENCES: TRENDS AND REMEDIES

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ABSTRACT

Scientific misconduct includes plagiarism, falsification and fabrication. The intentional presentation of other's work as own work without any authority is referred as plagiarism. Plagiarism also contains other's images, structure and designed elements. It affects both published and unpublished materials obtained through evaluation of dissertations, peer review process or grant proposals. Fabrication is an anoher research misconduct in which some fake activities are committed such as making up data, results and reporting them. If there is no any experimentation, it is also called fabrication. The Study shows that 60% of articles published in predatory journals are not found to be cited over the five-year period from the date of publication . A clear ethical standards should be made for assuring the researchers whether their work break certain codes or not. The investigation of organizations must be transparent, fair and prompt into research irregularities

Key words: plagiarism, fasification, fabrication., predatory, publication

INTRODUCTION

Scientific misconduct is the violation of the ethical behavior and standard codes of scholarly culture in a professional scientific research. It includes plagiarism, falsification and fabrication. Plagiarism is derived from the Latin word plagiaries that means to kidnap or abduct. The intentional presentation of other's work as own work without any authority is referred as plagiarism (Chaudhuri 2008). It is a serious form of cheating . According to United States Department of Education (2005), Plagaiarism is an activity of appropriating another person's words, ideas, results and processes without giving proper credit. Plagiarism also contains other's images, structure and design elements. It affects both published and unpublished materials obtained through evaluation of dissertations, peer review process or grant proposals. The authors are harmed by ignoring to acknowledge them and their contribution for knowledge generation. Plagiarism is a burning issue for colleges and universities throughout the world. Research shows that overwhelming number of academicians are admitted to stealing at some point of their career. Self-plagiarism is a fake activity, thus itsef a controversial issue. It is

stealing from oneself . Both plagiarism and self-plagiarism are worst, presenting the documents by copying original one. Duplicate or overlapping publication are the most common forms of self-plagiarism. Duplicate publication means a paper that does not give clear reference to the previous publication but overlaps substantially with that. Duplicate papers are slightly different from the original in content or the order of the authors. Hence it becomes tough to find out the duplication. On the other hand, falsification is the attempt of manipulating research papers, equipment, omitting or changing data. It is quite difficult to detect such practice because of very subtle presentation and artful manipulation. It is usually done to please their bosses by providing the desired data they believe. Fabrication is an anoher research misconduct in which some fake activities are committed such as making up data, results and reporting them. If there is no any experimentation, it is also called fabrication.

The predatory journal has the features like poor quality, legitimacy, charging publication fees to authors, missing other editorial and publishing services. Study shows that 60% of articles published in such journals are not found to be cited over the five-year period from the date of publication. Hence predatory journals provide false or misleading information, lack of transparency, deviation from best editorial and publication practices. The open access movement in bilolgical science at the beginning of this century brought revolution in communications therby, free access to the published articles without copyright or economic restrictions. Open access journals allow free access and reutilisation of their contents. Such journals depend on the payment of article processing charges due to lack of funding. It openes a path for corruption by profiting from the fees without providing any of the services like peer review expected from a scientific journal. The names and cover design are similar to the reputed journals of international prestige with high impact factor.

MATERIALS AND METHODS

This review article was prepared from secondary sources like google scholar, Sci-Hub, Shodh–Ganga, DOAZ, PubMed adn SHERPA/RoMEO. Various Scimago indexed articles were downloaded from these sources by searching through the key words and title.

RESULTS AND DISCUSSION

There are found various levels of research misconduct such as institution, department, journals, individual researchers and funding bodies. The major reasons for research misconduct are fear of failure and internal desire to be successful. Other reasons are to secure grants and financial incentives from donor agencies. The departments and researches are diverted to the concept of quantity rather than quality as research success. Meanwhile there is the correlation between the number of publications and career promotion or opportunity of funding. Most such criticism has come from current editorial and peer review processes that fail to prevent fake research getting printd even in the reputed journals (Adam 2002). We have a perception that papers published in high impact factor journals are almost true. The training and education of supervisors and individual researchers are very important to combat the misconduct. An environment should also be created to speak out the wrong issues. Research quality is ensured

and identified by peer review process. Any doubt on data should be discussed with the editor for verification. Auto-plagiarism is being practiced with different forms. An author firsltly writes an article to publish in a journal. The same author once again rewrites them and submits to another journal without giving the reference of the first publication. It is commonly found that the same article is published in different-language journals. It was more commonly practiced at the time before modern tools of internet facility. It is absolutely unethical that an author writes a no. of papers from the same database. Hence the text of the methods is recycled by elaborating results or discussion making more chance of aaceptance of the paper. It is a challenge to authors and editors for writing review article. Recycling of text easily appears which is still unacceptable. So it is necessary for a review author to find out new data and literature for producing a new synthesis. Scientific dishonesty is the action leading to false or distorted scientific results. It gives the false information about an individual contribution to research field. Scientific dishonesty is problematic for a number of reasons. The vulnerable research participants are directly or indirectly harmed by such practice. It may harm the trust in scientists and science in future days. Traditionally the norms of science are learned by witnessing exemplary behaviour. Mentors, supervisors and institutions played a significant role in promoting such norms. The basic spirit of biological science has changed due to increases in the number of researchers and time pressure. Research has become global and interdisciplinary as per the ties between private industry, academia and governmental research agencies. In addition, there is the pressure for increasing publications and achieving grants.

On the other hand, scientific fraud is often referred as intentional misrepresentation of the procedures, methods or results of scientific research. It includes all the behaviours like plagiarism, fabrication and falsification. It is almost illegal and scientific career of researcher may end by proven fraud. The attractive financial and reputational rewards might have induced some scientists to engage in scientific fraud. Plagiarism usually takes the form of copying another's theories, ideas and replacing key words to make new document while fraud is the intentional fabrication or falsification of data, methods, results and findings.. It is even possible to plagiarize oneself by not citing the source of the ideas. We can find many predatory journals of biology and falsified articles from within the last few years. The researchers are committed to these acts ignoring the risk factor because they are pushed to publish as often as possible. There may be huge pressure from bosses and supervisors to publish results. The other reason is frustration since many researchers have invested countless resources and hours to develop a theory and they think that the theory must be right. As a result, research may be weak or get falsified. Plagiarizing work have been found long before the use of Internet. Actually plagiarism occurred much more in pre-internet period than post-Internet period (Ison 2015). Although internet is a good source that provides unlimited access to information easily and instantly, the most common type of plagiarism through the internet are copying and pasting the material. There is significant consequences both academically and professionally for plagiarizing someone else's work. It may include civil and criminal penalties (Sheehan 2014) as well as academic penalties like failed class, failed assignments, removal from institution and even retracted degrees. The scientific misconduct consists of codes of responsible conduct i.e.

rules or guidelines for proper scientific and professional practice (Gunsalus 1993). For the sake of reducing academic dishonesty like plagiarism, the use of honor codes has been a long traditional and successful method. Study shows that reported cheating at institutions has decreased almost 20% with honor codes (Rettinger & Searcy 2012). Nowadays most of the institutions use plagiarism detection software to check plagiarism because of the increased writing and submission of assignments through online mode. The softwares like Plag Spotter and Turnitin may be used to compare the papers to a information database for searching similar, resubmitted, matching or plagiarized document (Bailey 2013, Brown *et al.* 2010).

CONCLUSION

In fact, there are a number of reasons for research misconduct such as academic pressure, financial gain, personal desire for fame, sloppy science and an inability to distinguish right from wrong. It definitely needs investigation, prevention and awareness to research misconduct. Only then general public will trust and respect biological research. Further discussion on its single, universal definition and various facets is required to prevent research misconduct. Moreover, clear ethical standards should be made for assuring the researchers whether their work break certain codes or not. The investigation of organizations must be transparent, fair and prompt into research irregularities . The organization or an indivudual should be punished when evidence of misconduct is confirmed. The whistleblowers standing this agenda should be protected for ensuring a right of appeal. Based upon the degree of misconduct, the inquiry may be operated at both institutional or national level. The integrity of the scientific system is being threatened by predatory journals . It has undermined the open access by creating confusion around the ethically operated journals. The reputation of editors and reviewers are harmed by including their name without permission. The quality of published content is compromised as they do not proceed sufficient peer review processes. Thus predatory journals are themselves becoming a reservoir of scientific misconduct.

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