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Plagiarism: Types, Causes and How to Avoid This Worldwide Problem

Publication in medical journals are important to help humans towards a healthier future and to disseminate knowledge regarding the pros and cons of any disease, treatment, drugs, research or other medical issues. There are many ways in which misconduct in medical research can be defined and the presence of thousands of journals worldwide and ease of access of these articles across the globe has not led to any common name to define this problem. There are many reasons for plagiarism starting from individual and not limiting to institutions, journals, textbooks, research funding agencies or international trials. Previously the only method to detect plagiarism was the ability/experience of the editor or reviewer to detect copies from the original. Newer and more sophisticated computer methods that analyze lexical, syntactic, and semantic features, tracking of paraphrasing, citation based detection, analyzing the graphics, cross language text borrowing by non-English speakers and copying of references will aid to detect plagiarism. Retraction of the article, blacklisting of the author with or without institution and expulsion from the institute, criminal charges, apology letter are some of the penalties for plagiarism.

Key words: citing, COPE, ethics, plagiarism

Publication in medical journals are important to help humans towards a healthier future and to disseminate knowledge regarding the pros and cons of any disease, treatment, drugs, research or other medical issues. The consensus is that the author(s), institution(s) and the data and material provided in any article published is written in an honest, true, unbiased manner within the confines of medical ethics. The Nuremberg code in 1947 and the subsequent Declaration of Helsinki 1964 (and later revised in 2002) give detailed methods within moral and medical ethical limits on how to conduct research on humans.[2,5,22]

Plagiarism ("plagiary") derives from the Latin word "Plagiarius" which means a kidnapper and it was first described in literature by the dramatist Ben Jonson in 1601 to describe someone guilty of literary theft.[26] The first article on this topic was written by Halsted G.B appeared in "Science" in 1896 under the title "complement or plagiarism" and since then hundreds of articles have been written in this topic.[11] With over 25,000 journals publishing medical research the exact extent of the prevalence of Plagiarism is presently unknown though rates of 11-19% have been reported and some journals have rejected around 23% of articles due to this problem.[19,27]

Despite all the strict, stringent, detailed and open instructions for researchers worldwide there are occasional instances of dishonesty regarding medical research publications. This article gives a summary of the types, factors and prevalence of medical deceit present in the world along with suggestions to prevent them.

Definition:

Merriam–Webster dictionary defines plagiarism as (1: a) The theft and use of other people's ideas or words as yours; b) Use of sources without attribution; c) Literary theft and d) presenting some ideas as own and as it is new, while this idea already exists in other source.

There are many ways in which misconduct in medical research can be defined and the presence of thousands of journals worldwide and ease of access of these articles across the globe has not led to any common name to define this problem. The first attempt to address plagiarism was in 1992 in the USA by the Office of Research Integrity (ORI) and then later in 1997 in the UK by Committee on Publication Ethics (COPE) both of which gave guidelines for research, scientific integrity and a set of principles to detect and present plagiarism. The commonly used definitions by some of the leading bodies worldwide are given below.

COPE describes misconduct as the "intention to cause others to regard as true that which is not true.[17] The Royal College of Physicians of Edinburgh: definition was "*Behaviour by a researcher, intentional or not, that falls short of good ethical and scientific standard*".[8]

ORI: defines research misconduct using the FFP model, that include:[24]

Fabrication – Making up data or results and recording or reporting them.

Falsification – 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.

Person's ideas, processes, results, or words without giving appropriate credit.

Research misconduct does not include honest error or differences of opinion

The World Association of Medical Editors (WAME) definition: "*the use of others published and unpublished ideas or words (or other intellectual property) without attribution or permission, and presenting them as new and original rather than derived from an existing source*".[28]

Types of plagiarism:

Plagiarism can be defined in many ways (Table 1).

Intentional or Unintentional[7,10]

Intentional plagiarism occurs when the author deliberately, intentionally or knowingly copies entire text, paragraph or data and presents as its own. Unintentional occurs when the author either is not aware of such research, is unaware of the ethics in writing or does not know how to cite and thus presents similar articles.

Text/words or Ideas/data[1,7,18,20]

The commonest form of plagiarism is of text known as "copy-cut-paste" or "word-to-word" writing wherein complete sentences, paragraph, tables or even pictures are reproduced without acknowledgement. Described as "*…copying a portion of text from another source without giving credit to its author and without enclosing the borrowed text in quotation marks.*"Although previous research need to be discussed complete copying of text is to be avoided. With use of computers and the internet this form of plagiarism is very prevalent. Copying of ideas is a common form of plagiarism wherein someone else's ideas, presentations, audio or video files, thoughts, inferences or suggestions are made into research and presented as own without proper acknowledgement. This is of course very difficult to detect or prove. Some other methods are taking ideas from books, previously published thesis, journals, magazines, conferences or meetings.

Source

This type of plagiarism uses previous article's citations without actually reading or cross referencing the bibliography.

Mosaic/patch writing[7,12]

This happens when a new author uses the previous article text by replacing, reordering or rephrasing the words or sentences to give it new look without acknowledging the original author. The American Medical Association Manual of Style describes mosaic plagiarism as "*… borrowing the ideas and opinions from an original source and a few verbatim words or phrases without crediting the original author. In this case, the plagiarist intertwines his or her own ideas and opinions with those of the original author, creating a confused, plagiarized mass.*"

CLONE–Submitting someone else's work, which is just transcribed, as his/hers own;
CTRL-C–Contains most of the text from a single source, without alterations;
RE–TWEET–Includes proper citation, but with too much text used from the original.
ERROR 404–Includes quoting non-existent or inaccurate source;
AGGREGATOR–Include proper citation of sources, but contains almost nothing of their own work;
FIND–REPLACE–Changing key words and phrases, but retaining a substantial part of the content of the primary sources;
EMIX–Paraphrasing multiple sources which are so arranged that complement each other
RECYCLE–The use of their own work (if the article is already published somewhere and not cited);
HYBRID–Combine perfectly cited sources with the copied without citation;
MASH UP–Blending the copied material which is taken from multiple sources;

Table 1: Some of the other ways of plagiarism.

Cross Check™
WCopyFind™
SafeAssign™
eTBLAST
Viper (http://www.scanmyessay.com/plagiarism - free software)
www.google.com
http://www.ithenticate.com
https://turnitin.com/static/index

Table 2: showing the various websites and program available to check for plagiarism.

Self Plagiarism[6,7]

This happens when the author has added research on a previously published article, book, contributed chapter, journal, and presents it as a new without acknowledging the first article or taking permission from the previous publisher.Submission of the same article to multiple journals to increase the chances of publication or making multiple articles from a single article, known as, "salami slicing" is another form of plagiarism. WAME's Ethics Committee says: *"With respect to the issue of how much overlap is too much…a rule of thumb that some editors have applied when considering the amount of overlap between two review articles (not book chapters) has been overlap of more than one-third of the material."*

Ghost writing

In this type the main contributor is not given due acknowledgement or someone who has not contributed is given due credit.

Collusional

In this type the author asks a professional agent or institution to write an article and then claims as its own.

Always acknowledge the original source of the idea, text, or illustration.
Enclose within quotation marks, all the text that has been copied verbatim from another source.
When paraphrasing, use your own words.
When not sure if the idea/fact they wish to include is common knowledge, cite references.
One must cite references accurately. The writer must read the instructions to authors to know what style they need to use (Vancouver style or Harvard referencing).
Avoid writing multiple separate articles if he can present a large complex study in a cohesive manner in a single article.
Along with the manuscript, submit a cover letter to the editor, clearly stating any instances of overlapping from previous publications and asking for advice.
If unintentionally using somebody else's ideas or text without appropriate referencing, to write to the editor of the journal for advice.

Table 3: Showing the common ways to avoid plagiarism as given by Das and Panjabi.[7]

Some other ways of defining plagiarism are given in Table 1.

Reason for plagiarism:[3,4,21,23]

There are many reasons for plagiarism starting from individual and not limiting to institutions, journals, textbooks, research funding agencies or international trials. An inherent desire or urge to be successful, cultural, psychological, aggressive nature towards success, fear of discrimination for failure, promotion, financial or job gains, peer pressure and need to increase one's record number of publications are some of the individual causes for plagiarism. Lack of education at the undergraduate level regarding plagiarism and the dogmatic view

expressed in textbook without the ability to self support are other reasons for this trend. The demand of publication during interviews are also another cause for plagiarism. To get university or research grants, incentives from pharmaceutical companies, increase the academic and social performance of the department, gain access to international research, aim of publishing in indexed journals are other causes at institutional level. Shortage of time, inadequate preparation, poor English or writing skills and the pressure to publish more articles than to consider the quality, in shorter time are other causes for plagiarism. Poor quality/maintenance of the journal, lack of proper guideline following regarding publication, poor reviewing methods or uneducated reviewer, competition amongst journal to publish more articles are some of the other factors that can lead to non-detection of plagiarized contents.

Detection of Plagiarism: [3,9]

Previously the only method to detect plagiarism was the ability/experience of the editor or reviewer to detect copies from the original. This involved extensive study of the literature, experience of the patterns of writing styles of different authors and cross checking them. In todays world there are many software and websites that help in detecting plagiarism (Table 2).

Reuse of words and text can be easily checked with computer aided programs. The high cost of using such programs is a major limitation for use by smaller budget journals and in developing countries. iThenticate® is one of the common plagiarism detection program that has access to nearly 226,000 journals, and more than 1,300 publishers worldwide employ its similarity check services and couldcost 6,800 USD per annum (for some journal). Although these programs detect major copies, articles where the text has been rephrased or substituted by synonyms (known as Rogeting after Roget's Thesaurus) it may fail to detect the copies. Newer and more sophisticated computer methods that analyze lexical, syntactic, and semantic features, tracking of paraphrasing, citation based detection, analyzing the graphics, cross language text borrowing by non-English speakers and copying of references will aid to detect plagiarism. Until there is a single detection system that is universally used worldwide, 100% prevention of plagiarism is difficult.

Penalties for Plagiarism: [13,25]

Retraction of the article, blacklisting of the author with or without institution and expulsion from the institute, criminal charges, apology letter are some of the penalties for plagiarism. The extent of penalty depends on the journal or editor or editorial board policies. Generally,an explanation letter along with correction from the author is sought in mild cases with banning from further publishing in severe cases. The extent of plagiarism could determine the severity whether its simple text copying, self-plagiarism or idea plagiarism. The former is considered milder than the latter and plagiarism by seniors is considered more severe than juniors.

Avoiding Plagiarism in writing articles: [13-16]

Plagiarism is widespread even in developed countries and can be avoided by being honest while writing articles. Some of the ways to do this is by being original, taking time to write articles, writing in your own words, acknowledging all the studied articles, proper reference and strict adherence to the author or journal guidelines. Avoid copy paste type of writing and always write in the cover letter to Editor of any similarities with other article in literature. Some of the key messages given by different authors in literatureare summarized by P Mohan Kumar et al.[13] As given by Das and Panjabi the common ways to avoid plagiarism is given in Table 3.[7]

Conclusions:

Plagiarism is a common but avoidable malpractice prevalent in the world. It affects all from students to senior teachers and from developing to developed countries. Strict adherence to the journal guidelines and being honest can help to reduce this burden on the scientific society. Use of the common computer aided tools to detect plagiarism followed by severe punishment to the guilty, blacklisting the authors, worldwide notice of their activity, are some ways to address this problem. School syllabus to avoid plagiarism in medical courses can also help the younger generation and the demand for "quantity" rather than "quality" of published articles in jobs, interview, promotion and academics can further ease this problem.

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