Knowing and Avoiding Plagiarism During Scientific Writing

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Abstract

Plagiarism has become more common in both dental and medical communities. Most of the writers do not know that plagiarism is a serious problem. Plagiarism can range from simple dishonesty (minor copy paste/any discrepancy) to a more serious problem (major discrepancy/ duplication of manuscript) when the authors do cut-copy-paste from the original source without giving adequate credit to the main source. When we search databases like PubMed/MedLine there is a lot of information regarding plagiarism. However, it is still a current topic of interest to all the researchers to know how to avoid plagiarism. It's time to every young researcher to know ethical guidelines while writing any scientific publications. By using one's own ideas, we can write the paper completely without looking at the original source. Specific words from the source can be added by using quotations and citing them which can help in not only supporting your work and amplifying ideas but also avoids plagiarism. It is compulsory to all the authors, reviewers and editors of all the scientific journals to know about the plagiarism and how to avoid it by following ethical guidelines and use of plagiarism detection software while scientific writing.

Keywords: Plagiarism, Scientific writing, Unethical publication practice

Introduction

Medical and dental writing includes presentation of different scientific documents that consists research related topics, case presentations, and review articles, which help in educating and promoting health related information to the general public. Hence, all the medical and dental writers along with language skills and the ability to interpret the data, they should also be familiar in searching literature, understanding and presenting ones ideas or thoughts in the form of articles submitted to the number of available scientific journals.[1,2]

Due to the lack of education on plagiarism among the educational institutions and the members of journal holders we are allowing some types of plagiarized articles to publish.

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In simple words, plagiarism is the use of others ideas or work without any credit to the original authors. In other words, taking credit for others work whether intentionally or unintentionally.[3]

Main route cause of plagiarism among dental and medical writers is the competitive stress among them and the availability of any information of others in the electronic media.[4-6] As the plagiarism is an unethical publication practice, it has to be avoided at the first stage itself.[7]

When the dental/medical writers want to publish a scientific paper, they have to be very specific, accurate and honest about the concept of the research. First, the author has to take sufficient time to read and understand thoroughly the main source of the article, and then he can organize into his own ideas or thoughts. Before submitting their ideas or manuscript to the journal office, the author has to rewrite the article in his own words without seeing from the original source and in doubt, takes help of the guide/instructor.[4,7,8]

This article reviews plagiarism at different levels, consequences, guidelines to avoid plagiarism and benefits from avoiding plagiarism.

Plagiarism Definition

The word plagiarism is derived from Latin. "Plagiare means to kidnap."[3]

Office of research integrity definition

The Office of Research Integrity describes plagiarism as "theft or misappropriation of intellectual property and the substantial unattributed textual copying of another's work. It does not include authorship or credit disputes. The theft or misappropriation of intellectual property includes the unauthorized use of ideas or unique methods obtained by a privileged communication, such as a grant or manuscript review. Substantial unattributed textual copying of another's work means the unattributed verbatim or nearly verbatim copying of sentences and paragraphs which materially mislead the ordinary reader regarding the contributions of the author."

Committee on publication ethics definition

In 1999, the Committee on Publication Ethics (COPE) defined plagiarism as, "plagiarism ranges from the unreferenced use of others' published and unpublished ideas, including research grant applications to submission under "new" authorship of a complete paper, sometimes in a different language. It may occur at any stage of planning, research, writing, or publication: It applies to print and electronic versions."

According to the Oxford English Dictionary, Plagiarism is defined as - "the action or practice of taking someone else's work, idea, etc., and passing it off as one's own; literary theft."

The World Association of Medical Editors defines plagiarism as - "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 and existing source."[3,4]

Plagiarism is defined as the appropriation or imitation of the language, ideas and thoughts of another author and representation of them as one's original work. (The Random House Dictionary of the English Language - unabridged).

Academic dishonesty has reached from students in the classroom to the presenters in the scientific sessions and even to the reviewers and editors of unauthorized journal offices.[9,10]

The following are some of the common possible causes for the increase in plagiarism. For example: Due to the increased competition or laziness among students while writing dissertation and professional over ambition, competition or publish or perish attitude for promotion among young authors could be the result of plagiarism. Reviewers and editors of different scientific journals are also responsible to avoid plagiarism by using plagiarism detecting software before publishing the research.[2,11-13]

Source and Method of Data Collection

Availability of internet facilities and free online journals are the main sources of today's plagiarism among the students, faculty and researchers of any profession.[5,6,14-16]

Advancement in technology in conversion of text format into the electronic version, rise in competition levels and "publish or perish" attitude are the some important factors prone to plagiarism among the students/staff/researchers of educational institutions.[15-17]

Data collection

An online search on "plagiarism" was performed using PubMed/MedLine databases. In the MedLine each reference to the medical literature is indexed under a controlled vocabulary called medical subject headings (MeSH). These MeSH terms acts as a key to search the medical and dental literature. Thus MedLine/PubMed databases are used to search for literature which is available online throughout the world. Initially, 1121 references are obtained in PubMed/MedLine databases on the term "plagiarism" until date. A total of 893 articles are published on plagiarism under MeSH.

After filtering and based on the selection criteria, 35 articles were included in this review. The articles which are related to the dental and medical scientific writing were included in this review. It has taken 6 months for searching, filtering and selecting all the articles to include in this review. The sequence of data collection is demonstrated in Chart 1.

As there is no sufficient literature on this subject (topic), it is the time to educate all the professions on how to avoid plagiarism through the journals and educational institutions in order to prevent publishing diluted researches.

Common Types of Plagiarism

Plagiarism can be of various types. Plagiarism may be intentional or unintentional.

Intentional plagiarism

"Buying or borrowing or cut-copy-paste" or using some others work partly or completely without giving adequate credit to the original author results in intentional plagiarism.[7-9]

Unintentional plagiarism

Using some others work with wrong paraphrasing or improper citation refers to unintentional plagiarism.[1,7-9]

According to the COPE various types of plagiarism can be distinguished based on factors like: Extent (minor or major plagiarism), originality of copied material, type of material plagiarized, sources referenced or not, authors intention. The
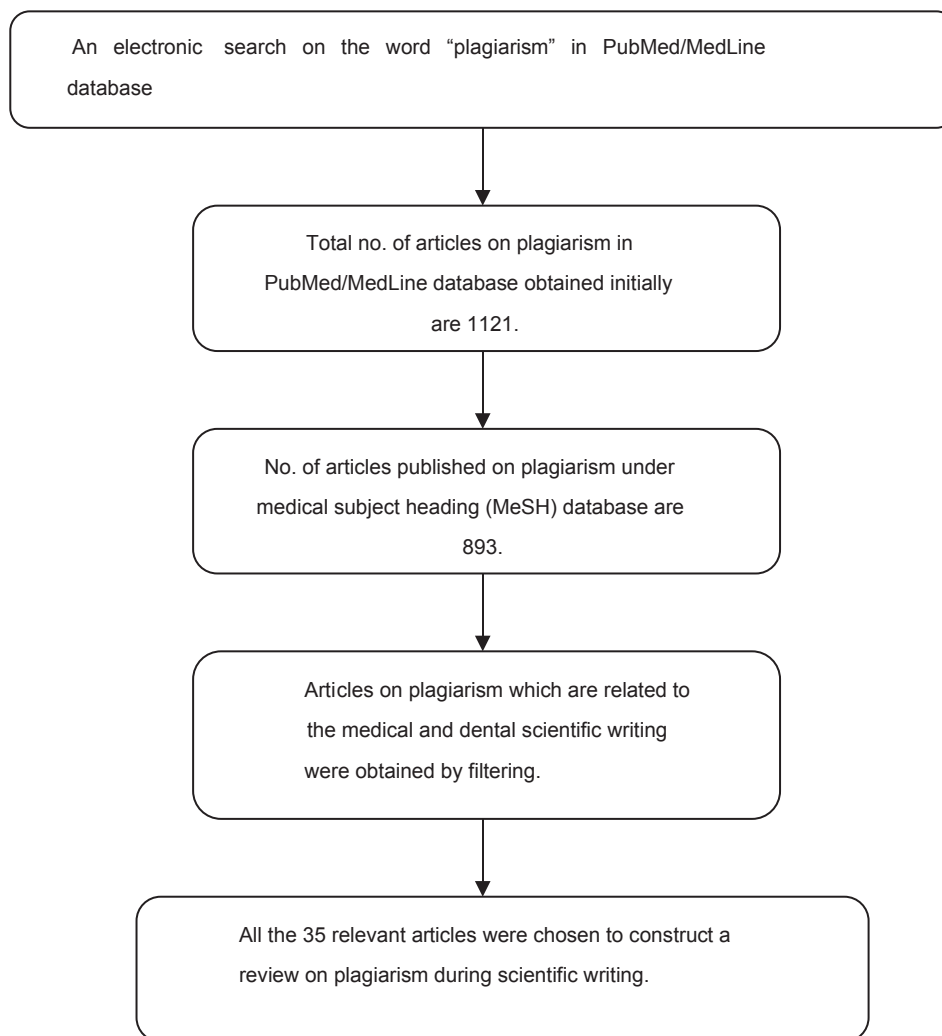
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│  construct a review on plagiarism during         │
│  scientific writing.                              │
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Chart 1: A flow chart diagram showing the steps used for selecting the articles included in this review

following are the most common forms of plagiarism seen in medical and dental publications:

1. Plagiarism of ideas: When the author "uses the ideas or thoughts of some others and presents as his own"[3] without giving adequate credit to the original authors results in plagiarism of ideas. For example, using the ideas from the previously published articles by postgraduate students while doing their dissertation work.

2. Plagiarism of text/direct plagiarism/word-for-word plagiarism: According to Roig this kind of plagiarism is defined as "copying a portion of text from another source without giving credit to its author and without enclosing the borrowed text in quotation marks."[1,3,9] For example, most of the young authors do not know how to write and give a credit to the original work from where they have chosen. They just cut and paste from the original source and create an article without giving sufficient credit to the authors who has done the original work.

3. Mosaic plagiarism (patchwork plagiarism): When the author fails to write in his own words and "uses the same words or phrases or paragraphs of the original source" without giving adequate credit results in mosaic plagiarism.[3,7] For example, when the authors borrow words/sentences from the original source and do patchwork to his article results in patchwork or mosaic plagiarism.

4. Self-plagiarism: "Stealing or borrowing some amount of work" from his or her previously published articles refers to self-plagiarism.[1,3,7,8] For example, using one's own work partly and publishes the article in different journals results in self-plagiarism.

Penalties for Plagiarism

Since plagiarism can range from simple dishonesty to a serious problem, penalty depends on the severity of plagiarism. It ranges from formal disciplinary action (apology letters, retraction of the published article) to criminal charges (suspension and prosecution of authors).[1,17-21]

Example: "A practicing psychiatrist and radio and television broadcaster in London had to step down as director of the Center for Public Engagement in Mental Sciences in the

institute where he was employed and was suspended from practice for 3 months by the General Medical Council."[22,23]

Detection of Plagiarism

All the medical and dental ethical writers must check for the text duplication unintentionally by using plagiarism detection software before submitting to any journal office. Reviewers also should use plagiarism detection tools in order to avoid false publication practice by both intentional and unintentional authors. When the manuscript passes from the reviewers to the editors without identifying the copied text or ideas, the editor of the journal should finalize the fate of the article based on the extent of plagiarism by using powerful plagiarism detection software. The following are few plagiarism detection software which helps in screening for matching text in the article submitted by the authors.[24-29]

Examples

1. Cross Check™
2. http://www.ithenticate.com
3. https://turnitin.com/static/index
4. Viper (http://www.scanmyessay.com/plagiarism - free software)
5. Software like eTBLAST
6. SafeAssign™
7. WCopyFind™

8. http://www.checkforplagiarism.net
9. http://www.grammarly.com
10. Sometimes simple Google Search also helps in detecting plagiarism.

Guidelines to Publish a Quality Paper without Plagiarism

Many of the students and authors still do not know the proper way of citing the sources. In order to produce a quality paper every author should follow the following guidelines.[3,22,30-33]

Few good rules to avoid a charge of plagiarism are:
1. Take sufficient time to complete your work
2. Understand the whole concept and write the new ideas in your own words
3. Avoid "copy-paste"
4. Always use few appropriate and accurate sources as possible
5. Learn how and when to quote and also avoid patchwork
6. Always cite new and in doubt, not common language
7. Follow the author's guidelines according to the biomedical journals
8. Cite references accurately
9. Always acknowledge and give sufficient credit to the original sources
10. Avoid writing several articles of the same type and submitting to different journals at the same time

Table 1: Summarize the key message given by all the authors on plagiarism in different articles which are included in this review

Author	Article type	Article title	Key message
Jones	Handbook	Academic integrity and academic dishonesty	Gives information on different types of plagiarism and also helps the students to understand the rationale for academic integrity
Das and Panjabi	Review on medical writing	Plagiarism: why is it such a big issue for medical writers?	This article cites the examples of retraction of articles, suspension of authors, apology letters from journal editors and other such actions against plagiarism
Shashok	Review article	Authors, editors, and the signs, symptoms and causes of plagiarism	Provides practical advice for researchers on how to improve their writing and citing skills and thus avoid accusations of plagiarism
Jagadesh Kumar	Editorial	Being wary of plagiarism	It reminds the responsibilities of authors to communicate effectively without violating the ethical standards
Sharma	Training	How to become a competent medical writer?	It provides information in writing different types of scientific documents
Carver, Dellva, Emmanuel, Parchure	Residents page	Ethical considerations in scientific writing	Illustrates complex issues faced by the authors in different cases of scientific writing
Sharma and Singh	Postgraduate education desk	Ethics in writing: Learning to stay away from plagiarism and scientific misconduct	Researchers, especially postgraduate students, educated about ethical medical writing
Gupta	Quality paper	Fraud and misconduct in clinical research: A concern	Discusses the between fraud and misconduct, the possible reasons for the occurrence of the same and explores options, which can possibly help prevent such instances
Handa	Editorial	Plagiarism and publication ethics: Dos and don'ts	This article helps in educating and increasing awareness of ethical issues pertaining to scientific publications
Garner	NIH-PA author manuscript	Combating unethical publications with plagiarism detection services	Information on various plagiarism detection services, examples of the type of operability and output and things that need to be considered by publishers, editors and reviewers before selecting and using these services is provided

11. Consult with a translator or native speaker before sending the final proof of the manuscript to the scientific journals
12. Use anti-plagiarism tools to detect any accidental plagiarism. For example, plagiarism detection software like Cross Check
13. Enclose the covering letter to the editor regarding for any overlap unintentionally.

Benefits of Avoiding Plagiarism

When writing a good scientific paper one should diagnose for any plagiarized material which helps in avoiding misrepresentation of any hypothesis or scientific misconduct. Table 1 enumerates the key messages given by the authors on knowing and avoiding plagiarism during scientific writing. Thus, every young author tries to learn how to write or present an article or research work in his own words by following the rules of good scientific writing. With the help of anti-plagiarism tools one can avoid duplicate manuscripts at journal office. Thus, it gives immense respect and truthfulness toward science and gives the way for quality papers to publish. Lastly, by rejecting plagiarized articles at journal office by the editor, it also helps every author to think for newer concepts.[23,26,33-35]

Summary and Conclusion

In order to publish a good scientific paper, one has to make an honest effort to read the original sources thoroughly and then put down one's own ideas or thoughts in his own words with proper paraphrasing, citation and by using quotation marks where ever necessary to avoid plagiarism.

With the advancement of technological field, even the dental and medical writers need to think new for ideas, concepts, techniques or for any hypothesis which further helps in the advancement of dental and medical field.

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How to cite this article: ???

Source of Support: Nil. **Conflict of Interest:** None declared.

Retraction Notice

The following article is being retracted as a the manuscript was already published.

Sohi RK, Gambhir RS, Sogi GM, Veeresha KL, Randhawa A. Dental health status and treatment needs of police personnel of a North Indian State: A cross-sectional study. Ann Med Health Sci Res 2014;4:567-71.

Editor, AMHSR