

Plagiarism detection softwares: Useful tools for medical writers and editors

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In 2010, Pakistan ranked 43rd in the world in the scientific publications and it is expected that Pakistan will rise to the 27th place by 2018.¹ Nowadays medical writing is no more an optional activity for the undergraduate medical students, residents and faculty members. Students want experience in medical research and writing to secure

electives in reputable universities abroad. Residents and trainees need to engage in medical research and writing to learn this science and complete the mandatory thesis/dissertation required as a pre-requisite for the fellowship exam and improve their chances of residency matches abroad. Faculty members are required to teach

Table: A compilation of plagiarism detection websites and softwares.

Resource name	Description*	Web address	Subscription fee	Software download required	Multiple language support	File formats accepted
Turnitin	It uses a set of algorithms to make a digital fingerprint of any text document, and then compares it against Internet sources and against an in-house database. Results are compiled into an 'originality report' which colour-codes and underlines text passages showing similarities to other sources, and gives the URLs of the sources. ⁹ It can also integrate with the online learning tools	http://turnitin.com/	Yes	No	Yes	TXT, MS Word
eTBLAST	Text comparison engine which uses the keywords in the text to check against articles available online	http://etest.vbi.vt.edu/etblast3/	No	No	No	TXT only
Plagiarism Checker X	Online plagiarism checking, cross-comparison of multiple documents, keywords searching, bulk searching, and website scanning.	http://plagiarism-checker-x.en.softonic.com/	Yes (with free trial)	Yes	Yes	Multiple (MS word, TXT and PDF)
iThenticate	Files are compared with 37 million published research articles approx. five hundred global scientific, technical and medical publishers including Pubmed and EBSCO Host.	http://www.ithenticate.com/	Yes	No	Yes	Multiple (MS Word, Word XML, WordPerfect, PostScript, PDF, HTML, RTF,ODT) and TXT)
Citeplag	Identifies plagiarism by analyzing citation pattern matches between documents to detect both local and global document similarities at the semantic level.	http://citeplag.org/	No	No	English and Chinese	TXT and PDF
Plagiarism detect	Online tool which checks texts for similarities with open online sources (that can be reached without password and are not closed for indexation) and other web pages.	http://plagiarism-detect.org/	Yes	No	English and Spanish	Multiple (doc, docx, ODT, TXT)
Plagium	Online website which displays the links to documents where it finds text that matches or closely matches the text that the user has submitted	http://www.plagium.com/	Yes (text up to 25,000 characters is free)	No	Yes	TXT only
Plagiarism Detector	Compares the submitted text with millions of documents and websites and highlights the parts which have been plagiarized	http://plagiarismdetector.net/	No	No	No	TXT only
Plagiarisma	Compares the submitted text with millions of documents and websites and highlights the parts which have been plagiarized. Includes options to compare with Google books and Scholar	http://plagiarisma.net/	Yes, with free membership with limited options	No	Yes	PDF, DOC, DOCX, RTF, ODT, TXT, HTML

*The description of the softwares and programmes has been taken from the respective websites and FAQs section of the website

MS: Microsoft; PDF; portable document format; TXT: text; ODT: open document text; RTF: rich text format; HTML: Hypertext Markup Language; XML: Extensible Markup Language.

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their students and publish a certain number of manuscripts for academic promotion, improving curriculum vitae and establishing their names as experts in a particular field.

This trend has led to an increase both in the number of

scientific journals being published from Pakistan and the number of submissions to international biomedical journals. The pressure to publish combined with lack of formal training in biomedical research and writing leads to many questionable ethical misconducts. Research misconduct and plagiarism has been reported among medical students and faculty.²⁻⁴ Higher education commission of Pakistan has devised a comprehensive plagiarism policy⁵ but there is a lack of understanding of this aspect among students, residents and faculty across the country.⁶ Still there is no excuse for any unethical behaviour, and the offenders might get severe punishments. Therefore it is imperative that any professional involved in medical writing should take extreme caution, not to indulge in deliberate or non-deliberate plagiarism.

One of the means to avoid and detect plagiarism is the use of plagiarism detection softwares.^{7,8} Although some of them are subscription based, many free resources and softwares are also available. These tools and softwares can be used by the authors to screen their manuscripts before submission for possible plagiarism and similarity index and by the editors to detect plagiarism in the submitted articles.

Screening of articles with these softwares can help in detecting plagiarized manuscripts early so that they can be rejected before the formal peer review process. This will reduce the manuscript processing costs to the journals and reduce the peer reviewer's burden by asking them to review only genuine good quality papers. In addition it would be an incentive to the hardworking and honest researchers who do not indulge in objectionable practices of medical writing.

An overview of the selected plagiarism detection softwares and their website links are given in the Table. This is not a comprehensive list and we have only presented a sample of the many sources available online. Also all are not complementary and require a subscription.

A file is uploaded for comparison or text is entered in the

search box on these websites. These websites then compare the document text against millions of articles, databases and web pages online. A report is generated which, in most of the cases not only highlights the suspicious and plagiarized material but also gives a reference to the documents from where the material might have been taken. Some of the websites and softwares give an estimate of the similarity index.

It is recommended that the universities and teaching institutes including the medical colleges and the CPSP should procure these resources and check the thesis, assignment and dissertations for possible plagiarism. Students, residents and faculty can themselves use these resources to screen their manuscripts. In addition emphasis on ethical issues encountered in medical research and writing should be included in the undergraduate medical school curriculum and post graduate residency training. Students should know ethics of medical writing to avoid deliberate plagiarism and questionable publication. This will result in better and high quality scientific publications from Pakistan.

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