How clinicians can validate scientific contents?

Fundamental components of scientific writing are accuracy, integrity, clarity and conciseness. Good scientific writing is represented by clearness, concise expression, accuracy of the report, and most importantly, honesty.[1] Academic honesty means that the work scientist submits, in whatever form, is original. However, one of the most common ways of compromising the academic integrity of the author and most widely recognized unethical lapse is plagiarism.[1] As there are no universal regulations on plagiarism prevention, it is important to cite references correctly. Citing materials that author has referred to correctly enables to avoid plagiarism and in the same time, to follow ethical, moral, and legal regulations acceptable by scientific community.

True knowledge is gained through scientific research.[2-4] It seems that the highest aim of human knowledge is the ability to investigate problems scientifically.[5] Scientometrics is the study of measuring features and characteristics of science and scientific research. Normally, scientometrics is often made using some bibliometrics and measuring of the impact of scientific literature.[2,5] Scientometric procedures are increasingly used to analyze developments and trends in science and technology. Modern scientometrics is mostly based on the work of Derek J. de Solla Price and Eugene Garfield.[5] Garfield has been striving to mathematical representation developed several factors that allow the assessment value and importance of scientific publications, including the most important impact factor (IF) and the H-index.[5]

Some of the indicators used in the evaluation of scientific research are:

- Impact factor
- Article citations
- Journal citations.

Impact factor is the number of citations of articles published in the journal during the previous 2 years divided by the total number of articles published in the journal during the same period.[5] Factor of influence depends on: The quality of the journal, the language on which it was printed, the area it covers, and the magazine distribution system. IF in the academic journal is a measure that reflects the average number of citations of articles published in the journal. IF is used to compare different journals in a particular area.[5] In a given year, the IF of the journal is the average number of citations received per paper published in that journal during the previous 2 years. For example, if a journal IF = 3 in 2013, then the articles published in 2011 and the 2012 had three citations on average in 2013.[5]

Impact factor for the 2013 of the journal will be calculated as follows: A = number of cited articles published in 2011 and 2012 in indexed journals during the year 2013. B = the total number of articles published by the journal in 2011 and 2012. 2013 IF = A/B.[5]

H-index is an index that attempts to measure the productivity and impact of published work of scientists [Figure 1]. The index is based on the basis of the most cited papers and the number of citations that papers received in other publications.[5] This index can also be applied to the productivity and impact of a group of scientists, such as department or faculty, as well as journal. H-index proposed by Jorge E. Hirsch, a physicist at UCSD, as a tool for determining the relative quality.[5]

It is clear, from Table 1, that the H-index of the oldest Biomedical Journal Medical Archives is significantly higher with H-index of 10, which means that the scientist who in this magazine published 10 papers have at least 10 citations for each work in other journals.

One of the greatest, and sadly too common, problems that participants in the academic process encountered is plagiarism. The term plagiarism stems from the Latin word plagium, meaning kidnapping a man.[6] Literary, plagiarism means theft, taking material authored by others and presenting it as someone else's. American Association of university Professors defined plagiarism as "taking over the ideas, methods, or written words of another, without acknowledgment and with the

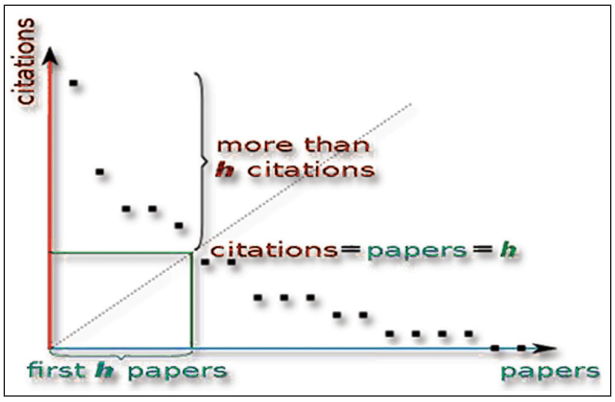

Figure 1: H-index of the plot decreasing citations for numbered papers (http://en.wikipedia.org/wiki/File:H-index-en.svg)

Table 1: Presentation of biomedical journals in B and H ordered by the H-index values

Title	Type	SJR	H index	Total Docs. (2013)	Total Docs. (3 years)	Total Refs.	Total Cites (3 years)	Citable Docs. (3 years)	Cites/Doc. (2 years)	Ref./Doc.	Country
Bosnian Journal of Basic Medical Sciences	j	0,229	9	49	182	1.193	125	170	0,57	24,35	
Acta Informatica Medica	j	0,217	4	72	53	1.361	39	49	0,80	18,90	
Medicinski Arhiv	j	0,173	11	42	333	0	163	327	0,48	0,00	
Acta Medica Academica	j	0,168	2	12	30	0	12	25	0,48	0,00	
International Journal of Collaborative Research on Internal Medicine and Public Health	j	0,142	6	0	229	0	55	227	0,19	0,00	
Veterinaria	j	0,124	1	30	41	769	3	33	0,09	25,63	
Technics Technologies Education Management	j	0,123	6	0	498	0	54	498	0,11	0,00	
Electronics	j	0,123	0	4	1	54	0	1	0,00	13,50	
Sport Science	j	0,111	3	36	108	819	6	108	0,04	22,75	
HealthMED	j	0,108	6	0	1.059	0	100	1.058	0,09	0,00	
South East European Journal of Economics and Business	j	0,106	2	0	61	0	10	61	0,17	0,00	
Acta Medica Saliniana	j	0,100	1	0	67	0	0	63	0,00	0,00	

intention that they be taken as the work of the deceiver" (September/October, 1989).[1]

Academic honesty means that the work scientist submits, in whatever form, is original. Scientists are expected to build their work on that of other people. Giving credit to someone whose work has helped them is expected; in fact, not to give such credit is a crime. Plagiarism is the severest form of academic fraud.[1]

According to the World Association of Medical Editors strict definition, plagiarism is when six consecutive words are copied, 7-11 words are overlapping set of 30 letters.[7] Generally speaking, plagiarism is when someone uses others' ideas, statements, linguistic style and does not acknowledge intellectual originators. "Before the plagiarist taken as their own people's tables or text, today there is a growing interest in taking the ideas and concepts".[8]

Although plagiarism can take many forms there are two major types in scholarly writing: Plagiarism of ideas and plagiarism of words. Words plagiarism is divided into three categories:

1. The direct form-completely or partially copying of text, computer files, audio or video recordings without acknowledging primary source
2. Mosaic form — borrowing ideas and opinions from the original source, few words and phrases without citing this source;
3. Self-plagiarism — reuse of one's own work without quotation and permission to reproduce text.[6]

This is one of the most common ways of compromising the academic integrity of the author and cause of constant conflict in scientific-research sphere of interest. It is not enough to change a few words in a phrase from the source material into "own words." Change the order of words in a sentence is also not acceptable, as well as the use of synonyms, such as changes from the "air" to "atmosphere."[6]

When writing papers, it is possible to use other people's words and ideas, but with mandatory labeling and reference to the source from which these words and ideas are taken. The references, as an indispensable part of any scientific and professional work, contribute to the quality of work, speaks of the sources used and thus the depth of information on the subject by which the work is dedicated.[6]

There are no universal regulations on plagiarism prevention suitable for all scientific and academic institutions.[1] In order to avoid plagiarism, authors should: Follow rules of properly citing references; references must contain full bibliographic information; each source cited in the text must be listed in the bibliography; quotation marks should be used if more than 6 consecutive words are copied; obtain permission from other authors/publishers to reproduce copyright-protected graphics or text; it should be also noted that plagiarism can now be detected electronically (e.g., by use of CrossCheck of iThenticate).[6]

Researchers rely on the published data, and have to be skilled to selectively process these data, to incorporate previous knowledge into a new paper, and to distinguish original ideas and research results from already publicized ones.[6] At the end of the assignment, author must list all the publications he/she has referred to (cited) in writing. This procedure is called citing or quoting references. Citing materials that author has referred to correctly enables to

avoid plagiarism and in the same time, follow ethical, moral and legal regulations acceptable by scientific community.[1]

In scientific circles, the reference is the information that is necessary to the reader in identifying and finding used sources. References must be accurate, complete and should be consistently applied.[1,9-11]

There are many different styles of referencing. Often, the preferred system of citation is depended on the scientific discipline in which the author writes.[6,9-11] The most commonly used systems are "author-date" (such as the Harvard system, APA, etc.) and numerical systems (such as CSA, IEEE, Vancouver style and others). Each system includes a precisely defined set of rules for attribution in the text of scientific or professional work and a way of referring to them. The aim is to make it recognizable what, in the text, belongs to the author and what is taken from other authors/sources. Once adopted, one way of reference must be applied consistently throughout the text.[6,11]

Although scientific writing is a complex and arduous process, it should be clear, accurate, honest, and concise. As is the case with most other human activities, errors can occur in scientific writing as well. In order to prevent the severest form of academic fraud — plagiarism — author must give credit to someone whose work has helped him/her by citing references correctly.

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