On Occasion of the 12th "Days of AMNuBiH 2021" and "SWEP 2021" Conferences, Sarajevo, Bosnia and Herzegovina

Izet Masic[1,2,3], Asim Kurjak[1,2,4], Slobodan M. Jankovic[1,5], Osman Sinanovic[1,2,4], Doncho Donev,[1,6] Benjamin Djulbegovic[1,7], Kenan Arnautovic[1,8], Muharem Zildzic[1], Enver Zerem,[1,9], Suad Kunosic[10], Sylwia Ufnalska[11]

[1]Academy of Medical Sciences of Bosnia and Herzgovina, [2]International Academy of Sciences and Arts in Bosnia and Herzegovina, Sarajevo, Bosnia and Herzegovina, [3]Faculty of medicine, University of Sarajevo, Bosnia and Herzegovina, [4]Sarajevo Medical School, University Sarajevo School of Science and Technology, Ilidza/Sarajevo, Bosnia and Herzegovina, [5]Faculty of Medical Sciences, University of Kragujevac, Kragujevac, Serbia, [6]Institute of Social Medicine, Faculty of Medicine, Ss Cyril and Methodius University, Skopje, R.N. Macedonia, [7]Beckman Research Institute, City of Hope, Duarte, CA, USA, [8]Department of Neurosurgery. University of Tennessee Health Science Center. Memphis. Tennessee. USA, [9]Academy of Sciences and Arts of Bosnia and Herzegovina, Sarajevo, Bosnia and Herzegovina, [10]Department of Physics, Faculty of Natural Sciences and Mathematics, University of Tuzla, Tuzla, Bosnia and Herzegovina, [11]European Association of Science Editors, Freelance science translator and editor, Poznań, Poland

Corresponding author: Professor Emeritus Izet Masic, MD, PhD, FWAAS, FEASA, FIAHSI, FEFMI, FACMI. Academy of Medical Sciences of Bosnia and Herzgovina, Sarajevo, Bosnia and HerzegovinaFaculty of medicine, University of Sarajevo, Bosnia and Herzegovina. Email: izetmasic@gmail.com. ORCID ID: http//www.orcid.org/0000-0002-9080-5456.

doi: 10.5455/aim.2021.29.295-310
ACTA INFORM MED. 2021 DEC 29(4): 295-310
Received: Nov 01, 2021
Accepted: Dec 03, 2021

12th Days of Academy of Medical Sciences of Bosnia and Herzegovina this year was organized together with International Academy of Sciences and Arts in Bosnia and Herzegovina in Sarajevo, Bosnia and Herzegovina on December 4th, 2021.

Title of the symposium was "Sciontometry, Citation, Plagiarsim and Predatory in the Scintific Publishing". Reason for this title was very frequent cases in the academic and scientific publications about four mentioned topics in the Bosnia and Herzegovina and other countries in Balcan region, but also worldwide. Authors of the presentations at the conference came from Bosnia and Herzegovina, Croatia, Serbia, North Macedonia, USA and Poland.

Within presenters of thir experiences in the scientific area covered by title of this conference were some of most influential scientists from Bosnia and Herzegovina who are included between 2% of authors deposited in the Stanford scientometric list, which were published several months ago. Also, some of authors are former or current Editors-in-Chiefs of indexed biomdical journals in Bosnia and Herzegovina, Croatia, North Macedonia (Izet Masic, Asim Kurjak, Doncho Donev, Osman Sinanovic). Also, Sylwia Ufnalska and Izet Masic are or have been members bof the European Asociacion of Scince Editors (EASE9 and and they have great expriences about topic of this cnference.

It was reason that we decided to prepare and publish abstracts of the conference and make it visible for other members of academic community in our countries and countries in the world.

Academic honesty means that the work scientist submits, in whatever form, is original. One of the greatest, and sadly too common, problems which participants in the academic process encountered are plagiarism and predatory. In order to prevent this severest form of academic fraud, author must give a credit to someone whose work has helped him/her by citing references correctly.

Science that analyzes scientific papers and their citation in the scientific journals - called scientometrics, day by dy became important for measuring scientific validity and quality of all kinds of publications deposited in the most important on-line scientific databases, like WoS, Scopus, Medline, Pubmed Central, Embase, Hinari, etc, but also in academic platforms ResearchGate and Academia.edu. Scioentometrics use Impact and Echo factor for measuring quality of publications in WoS journals, Scopus use H-Index, and most common index used last 10 years is Google Scholar. All of them have advantages and disadvantages, and also positive and negative influences in the academic praxis. Authors presented some of their experiences trying to help for improving some of mentioned matters.

This collections of abstracts (or "Proceedings" of the symposium "SWEP 2021") analyzed the major components of scientometrics, the basic mechanisms of citations in medical publications and plagiarism, as an opposite to the primary goal of scientific enterprise: search for truth.

DAYS OF AMNUBIH 2021: "SCIENTOMETRICS, CITING AND PLAGIARISM IN THE SCIENTIFIC PUBLISHING"

ABSTRACT

True knowledge is gained through scientific research (1-4). The highest level of knowledge is the ability to investigate scientific problems. Fundamental components of scientific writing are accuracy, integrity, clarity, conciseness and honesty (1, 4). Thus, good scientific writing must be characterized by clear expression, conciseness, accuracy of what is being reported, and perhaps most importantly, honesty (1, 2). Academic honesty means that the work scientist submits, in whatever form, is original. Scientometrics is part of scientology that analyzes scientific papers and their citation in the scientific journal selected sample (1). Scientometrics is the study of measuring features and characteristics of science and scientific research. In practice, scientometrics is often done using bibliometrics which is a measurement of the impact of scientific publications (5-23). 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 (3). 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, 8).

Recently published data in the scientometric list published by a group of authors from Stanford University in the USA, and based on the analyzed citation data of authors whose works are stored in the bibliographic database SCOPUS, aroused the interest of the BiH public, because among the most important 2% are academics from Bosnia and Herzegovina (24, 25). In order to better understand what and who it is about, it is necessary to briefly inform the scientific community on the following.

The basic part of scientometry is bibliometrics, which was introduced in the 1970s to mark quantitative research on communication processes by applying appropriate mathematical and statistical methods to published publications. In the seventies in the countries of the former Eastern bloc the name scientometry was introduced. More precisely, in 1969 the name scientometry was introduced which refers to the scientific field that deals with the study of science as an information process using quantitative (statistical) methods, and later Tibor Braun (in 1977 he founded the international journal *Scientometrics*), and then the name Scientometry was introduced. The four key indicators in the scientometric analysis of citations of scientific articles and their authors are: Impact factor; Article citation; Journal citations; Number and order of authors in the published article. "Scientometry was defined by its creators (as Naukometriya in Russian) Nalimov and Mul'chenko (1969 and 1989) as "the application of those quantitative methods which are dealing with the analysis of science viewed as an information process," although the idea of keeping an index of citations originated in 1873 with Shepard's Citations, in the United States common law, which enabled previous court decisions to be looked up with ease (1, 5).

Citation provides guidelines for scientific work, because it stimulates scientists to deal with the most current areas of research, and organizes scientific article at the world level, or shapes and directs it. Citation is influenced by: article quality, understanding of the article, language in which the article is written, loyalty to a group of researchers, article type, etc. Most scientific are cited by inertia, because every scientist has a set of articles that author cites whenever he/she writes about a certain topic. Some articles are cited in order that author raise citation index, a third because it is required by a reviewer or editor of a journal. And finally, perhaps only every fifth or tenth article is cited because it should have been cited. These are the articles whose data the author uses directly or touches on the problems and solutions presented there. All persons listed as authors of the article must meet the following conditions: that they have significantly con-

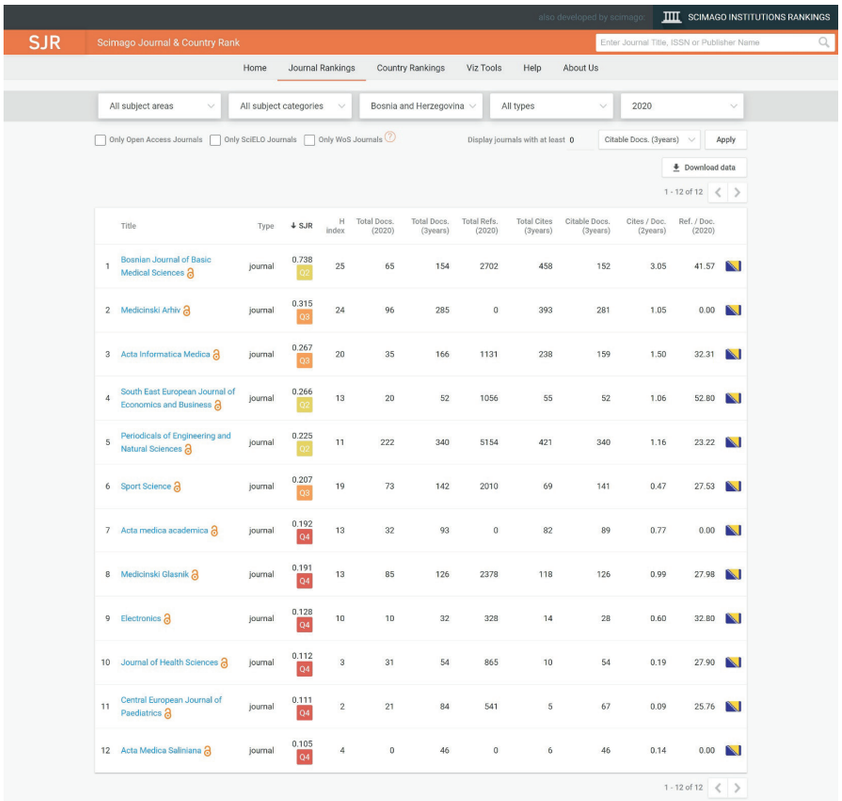

Figure 1. SCImago rank in 2020 of deposited BiH journals indexed in SCOPUS

	Country	↓ Documents	Citable documents	Citations	Self-Citations	Citations per Document	H index
1	United States	13817725	11986435	384398099	168230420	27.82	2577
2	China	7454602	7229532	78201759	44817420	10.49	1010
3	United Kingdom	4039729	3347117	102878206	22808209	25.47	1618
4	Germany	3515309	3151775	81454056	19404148	23.17	1429
5	Japan	3074206	2895478	54130480	13573127	17.61	1118
6	France	2437589	2203243	55858552	11260558	22.92	1286
7	India	2128896	1946730	22218913	7526767	10.44	691
8	Italy	2072168	1840490	43760942	10035285	21.12	1135
9	Canada	2037509	1796688	52825596	8841600	25.93	1299
10	Australia	1638743	1423945	37937045	7501967	23.15	1115
11	Spain	1628362	1468464	32533936	6927908	19.98	1010
12	Russian Federation	1359443	1302809	11135903	3726592	8.19	652
13	South Korea	1307978	1249982	20238524	3782419	15.47	762
14	Brazil	1145853	1067185	14701837	4684306	12.83	649
15	Netherlands	1131975	998112	34385395	4970776	30.38	1133
16	Switzerland	845108	745124	26479916	3253687	31.33	1085
96	Bosnia and Herzegovina	15911	14633	125626	12086	7.90	118

Figure 2. SCIamgo rank in 2020 of cited published papers in indexed journals in SCOPUS with h-Index - top 16 countries and in BiH (last one in presented table)

18096	Paola, C.	University of Minnesota Tw	usa	172	1983	2021	18.095	1.227	18	12,5194	10	44	27	243	94	755	3,4073
18097	Castle, Philip E.	National Cancer Institute (N	usa	445	1987	2021	18.096	2.783	23	9,4778	27	13	141	394	236	916	3,4072
18098	Sullivan, Matthew B.	The Ohio State University	usa	114	2002	2021	18.097	2.997	29	10,2175	1	12	10	158	61	1.175	3,4072
18099	Fejer, Martin	Ginzton Laboratory	usa	1.173	1981	2021	18.098	9.539	38	8,9573	11	9	29	109	399	569	3,4072
18100	Swain, Merrill	University of Toronto	can	77	1974	2019	18.099	970	13	8,5125	13	128	29	452	65	825	3,4072
18101	Kuo, Shiao Wei	National Sun Yat-Sen Univer	twn	379	2001	2021	18.100	1.691	18	10,7310	6	30	57	282	231	1.080	3,4072
18102	Janzen, H. Henry	Lethbridge Research and De	can	188	1984	2021	18.101	1.372	18	8,8491	15	116	41	258	86	520	3,4072
18103	Salam, Gavin P.	University of Oxford	gbr	147	1994	2021	18.102	5.736	25	9,9912	23	38	30	87	68	495	3,4072
18104	Daud, Adil	University of California, San	usa	180	1988	2021	18.103	5.827	33	6,8320	12	6	33	345	87	1.123	3,4071
18105	Khan, M. Ijaz	Riphah International Univer	pak	327	2005	2021	18.104	3.505	30	13,9361	0	0	90	1.004	108	1.117	3,4071
18106	Bartley, Tim	Washington University in St	usa	31	2001	2021	18.105	429	14	10,7000	12	270	25	392	30	427	3,4071
18107	Zhang, Yuanbo	Fudan University	chn	77	2005	2021	18.106	6.841	30	5,9352	0	0	9	1.323	22	3.787	3,4070
18108	Gruzelier, John H.	Goldsmiths, University of Lc	gbr	248	1970	2020	18.107	861	16	9,7409	55	154	117	237	207	660	3,4070
18109	Tavernarakis, Nektarios	University of Crete Medical	grc	231	1993	2021	18.108	4.022	27	12,5006	13	16	30	48	159	1.570	3,4069
18110	Djulbegovic, Benjamin	City of Hope National Med	usa	372	1985	2021	18.109	4.013	22	7,7860	20	24	120	350	236	679	3,4069
18111	Inhorn, Marcia C.	Yale University	usa	125	1986	2021	18.110	710	12	8,7659	53	167	96	608	117	667	3,4069
18112	Savitz, Jonathan B.	Laureate Institute for Brain	usa	99	2003	2021	18.111	1.153	17	8,2951	3	92	50	464	63	576	3,4069
18113	Munn, Lance L.	Massachusetts General Hos	usa	157	1993	2021	18.112	2.234	28	9,9565	4	42	17	118	62	623	3,4069
18114	Kindler, Hedy L.	The University of Chicago	usa	249	1997	2021	18.113	3.529	25	6,7690	15	24	39	274	78	1.050	3,4069
18115	Boyer, Rod	RBTi Consulting	usa	51	1972	2021	18.114	728	11	7,0873	8	392	26	517	36	601	3,4068
18116	Hetherington, Marc J.	The University of North Car	usa	22	1996	2021	18.115	598	11	8,5000	8	285	18	576	21	593	3,4068
18117	Glynn, Peter W.	Rosenstiel School of Marine	usa	122	1968	2021	18.116	764	12	8,3548	34	251	76	476	97	570	3,4068
18118	Dworkin, Shari L.	University of Washington-B	usa	104	1997	2021	18.117	888	15	8,6706	6	144	34	379	74	654	3,4068
18119	Beckman, Joseph S.	Linus Pauling Institute	usa	194	1977	2021	18.118	1.924	19	8,9549	10	32	28	417	100	822	3,4068
18120	Bray, Sarah J.	University of Cambridge	gbr	110	1984	2021	18.119	758	12	7,5277	11	332	24	401	75	649	3,4068
18121	Tserkovnyak, Y.	University of California, Los	usa	227	2001	2021	18.120	3.020	26	9,6190	2	5	42	469	137	1.343	3,4068
18122	Itzhaki, Ruth F.	University of Oxford	gbr	154	1960	2021	18.121	736	15	8,8303	30	159	69	400	134	632	3,4067
18123	Bose, Sougato	University College London	gbr	221	1996	2021	18.122	1.005	14	8,7713	8	131	44	362	155	767	3,4067

Figure 3. Screenshot of one of listed author presented in Stanford scientometric list

tributed to the planning and production of the article or analysis and interpretation of results and that they have participated in writing and correcting the article, and that they agree with the final version of the text. Persons who have not actively participated in the preparation of the article cannot be authors. The editor has the right to ask the author to explain the contribution of each of the co-authors, signing the relevant documents that are required when uploading the article to the journal's website. The contribution of one author is 1, and if the article was written by several authors, their contribution is 1/n. The contribution of each subsequent author is half less than the previous one. The order of the authors is determined by authors agreement.

Unfortunately, all of the above has been significantly neglected in the last few years, especially since the introduction of the Bologna concept of education, which disrupted the entire education system from primary schools to colleges and universities with a tendency to produce „troopers" for degrees.

One of the accompanying consequences of this is the „forcible" publication of articles and books and monographs (textbooks) that were needed to promote candidates for academic titles. This has seriously impaired the quality of education in the world, especially in the countries of the former Yugoslavia, and especially in Bosnia and Herzegovina. The problem has spread to other institutions in charge of science and scientific research, including academies. One of the authors of this article belongs to scientists who embarked, or rather dared, to deal with this problem, and in the last ten years has published several studies in the field of scientometrics, especially in

biomedicine. Important study was the study of citations of memebers of four academies in Bosnia and Herzegovina existed in the past, and of the two more academies have been established in this year. Part of his research is cited in a study by Chicago professor Bolung Joseph, in which the author stated that the USA Academy had a Scopus h-index of 63, Africa 31, Brazil 23 and Bosnia and Herzegovina 12. The fact that only these 4 were evaluated the academy says how scalable and risky the field of scientometry is and many avoid it because every mistake puts authors on a platter to sanction it in some way. All this is stated in order to explain in some way the weight of the allegations that these and those academics, and these academies in Bosnia and Herzegovina are among the 2% of the most cited scientists in the world. Doesn't the fact that the h-Index 12, which is significantly small compared to the well-organized countries of the world with a high level of education and high-ranking journals, bring up the question about the credibility of the data in the media and that Stanford's list may have been misinterpreted. Therefore, this data must be analyzed more seriously and possibly argued for their accuracy and credibility.

The authors who created Stanford's scientometric list of the most cited authors from articles stored in the SCOPUS bibliographic database methodologically took into account whether someone was the first, last or only author, and the like, and did so in great detail. Unfortunately, they did not take into account the number of authors per article. Then, they looked at the number of citations according to SCOPUS, and half of our citations are missing there (there are almost twice as many on ResearchGate). By random sampling control, we found that many well-known scientists from the Balkans are not on the list–whether it is up to SCOPUS and the articles deposited in its database or whether some journals were omitted by mistake should be explored. The example of the journal Folia Medica Facultatis Medicine Universitatis Sarevi-ensi, which does not exist at all, because it is registered in the SCOPUS database as if it were published in Zagreb (Croatia), is one of the proofs of this claim. Apparently, the list is phallic in the segment that the main thing was left out, and that is to divide the number of citations for each author by the number of authors per article–only then it would be realistic, but then half the authors would drop out of the existing list.

Some of our colleagues who deal with the problems of scientometry as a team believe that the ranking that was made and applied for publishing Stafford's list of the most cited scientists is global, and based only on the analysis of published articles deposited in one of the world's databases, SCOPUS, dangerous to science in general. This list emphasizes the formal part and the citation, no matter what caused it. Especially ignorant or insufficiently versed in the essence of such „meta-analyzes", mostly close to a very small circle of scientists who understand this problem (and almost 3 percent of authors who have published articles and are not close to this list), and who, especially journalists, or those more or less vicious, who seek exclusivity in this, will inevitably misuse the data in the list without delving into its essence and the accuracy/inaccuracy of the data, and it is inevitable that there is. Because the list includes some well-known names in a very high position, and the content of their contribution to science is more than modest.

If we check SCImago rank list of citation number of published and stored papers in Scopus database written by authors from former Yugoslav countries we can see in the list that Slovenia is on the first place (1,824.243 citations, h-Index is 349), Croatia has 1,417.239 citations and h-Index 324, Serbia has 1,276.485 citations and h-Index 290, North Macedonia has 168.037 citations and h-Index 135, Bosnia and Herzegovina has 125.626 citations and h-Index 118, and last one is Montenegro with 45.225 citations and h-Index 74. For the same year in SCImago rank list three academicians of AMNuBiH, who work or live out of BiH, has ben cited more times in 2020 year than all authors who were cited in Scopus database. Sapienti sat.

But, who and why are resonsible for that it is serious question and matter for discussion with another topic. But, definitly science and conditions for scientists to make research and investigations in our country are in great crisis. No one is interested in the real state of affairs in such a chaotic state locally and globally, where everyone hunts in the dark, including science and scientists, because the value system has reached the bottom, especially when it comes to honesty, ethics and morality. It is not disputed that we have scientists with a high scientific rating in BiH and our experts in other countries, where they are employed in scientific institutions and who with their published are high on lists like the one that is currently being promoted.

In the future, we should find ways to evaluate the content - e.g., if someone did 200 experiments and showed something about an unresolved issue (whether the result is positive or negative). That work must be valued more than if someone published a secondary or tertiary publication, where he only listed and commented a little on the primary data that other people collected.

Key words: Scientometrics, Citation, Stanford scientometric list, Plagiarism.

REFERENCES

1. Masic I, Predatory Journals and Publishers - Dilemmas: How to Assess it and How to Avoid it? Med Arch. 2021; 75(5): 328-334. doi: 10.5455/2021.75.328-334.
2. Masic I. Writing and Editing of Scientific Papers Using BOMRAD Structured Form and Proper Style of Reference's Citation. Inter J Biomed Healthc. 2021; 9(1): 4-14. doi: 10.5455/ijbh.2021.9.4-14.
3. MasicI, Begic E, Donev MD, Gajovic S, Gasparyan YA, Jakovljevic M, Milosevic BD, Sinanovic O, Sokolovic S, Uzunovic S, Zerem E. Sarajevo Declaration on Integrity and Visibility of Scholarly Journals. Croat Med J. 2016; 57: 527-529. doi: 10.3325/cmj.2016.57.527.529.
4. Masic I, Begic E. Meta-analysis as Statistical and Analytical Method of Journal's Content Scientific Evaluation. Acta Inform Med. 2015 Feb; 23(1): 4-11. doi: 10.5455/aim.2015.23.4-11.
5. Masic I. Scientometric analysis: A technical need for medical science researchers either as authors or as peer reviewers. J Res Pharm Pract. 2016 Jan-Mar; 5(1): 1-6. doi:

10.4103/2279-042X.176562.
6. Masic I, Begic E, Begic N. Validity of Scientometric Analysis of Medical Research Output. Stud Health Technol Inform. 2017; 238: 246-249.
7. Masic I, Jankovic MS. Comparative Analysis of Web of Science and Pubmed Indexed Medical Journals Published in Former Yugoslav Countries. Med Arch. 2020; 74(4): 252-264.
8. Masic I, Medical Publication and Scientometrics, J Res Med Sci. 2013; 18(6): 516–521.
9. Masic I. Unethical Behaviors of Authors Who Published Papers in the Biomedical Journals Became a Global Problem. Med Arch. 2020; 74(1): 4-7.
10. Jankovic SM, Kapo B, Sukalo A, Masic I. Evaluation of Published Preclinical Experimental Studies in Medicine: Methodology Issues. Med Arch. 2019; 73(5): 298-302. doi: 105455/medarh.2019.73-298-302.
11. Jankovic SM, Masic I. Evaluation of Preclinical and Clinical Studies Published in Medical Journals of Bosnia and Herzegovina: Methodology Issues. Acta Inform Med. 2020; 28(1): 4-11. doi: 10.5455/aim.2020.28.4-11.
12. Masic I. Plagiarism in Scientific Publishing. Acta Inform Med. 2012; 20(4): 208-213. doi: 10.5455/aim.2012.20.208-213.
13. Roig M. Avoiding unethical writing practice. Food and Chemical Toxicology. 2012; 50: 3385-3387.
14. Masic I. The importance of proper citation of references in biomedical articles. Acta Inform Med. 2013; 21(3): 148-155. doi: 10.5455/aim.2013.21.148-155.
15. Masic I. Unethical Behaviors of Authors Who Published Papers in the Biomedical Journals Became a Global Problem. Med Arch. 2020 Feb; 74(1): 4-7. doi: 10.5455/medarh.2020.74.4-7.
16. Masic I. The Malversations of Authorship - Current Status in Academic Community and How to Prevent It. Acta Inform Med. 2018; 26(1): 4-9. doi: 10.5455/aim.2018.26.4-9.
17. Masic I, Donev D, Sinanovic O, Jakovljevic M, Zerem E, Mi-losevic BD, Gajovic S, Gasparyan AY, Sokolovic S, Salkic N, Uzunovic S, Dobric S, Kurti F, Begic E, Kurtcehajic A. The First Mediterranean Seminar on Science Writing, Editing and Publishing, Sarajevo, December 2-3, 2016. Acta Inform Med. 2016 Dec; 24(6): 424-435. doi: 10.5455/aim.2016.24.424-435.
18. Masic I, Jakovljevic M, Sinanovic O, Gajevic S, Spiroski M, Ju- sufovic R. et al.. The Second Mediterranean Seminar on Science Writing, Editing and Publishing (SWEP 2018), Sarajevo, December 8th, 2018. Acta Inform Med. 2018 Dec; 26(4): 284¬296. Doi: 10.5455/aim.2018.26.284-296.
19. Masic I, Jankovic SM. Meta-Analysing Methodological Quality of Published Research: Importance and Effectiveness. Stud Health Technol Inform. 2020 Jun 26; 272: 229-232. doi: 10.3233/SHTI200536.
20. Masic I, Jankovic SM, Kurjak A, Donev DM, Zildzic M, Sinanovic O, Hozo I, et al. Guidelines for Editing Biomedical Journals: Recommendation by Academy of Medical Sciences of Bosnia and Herzegovina. Acta Inform Med. 2020 Dec; 28(4): 232-236. doi: 10.5455/aim.2020.28.232-236.
21. Masic I. Plagiarism in scientific research and publications and how to prevent it. Mater Sociomed. 2014 Apr; 26(2): 141-146. doi: 10.5455/msm.2014.26.141-146.
22. Donev D. Plagiarism as a problem in scientific publishing. IMJ Medicus 2015; 20(3): 319-24. Available at: http://www.medalb.com/revista/medicus-dhjetor-2015.pdf. Accessed: Sept. 30th, 2021.
23. Masic I. How to Search, Write, Prepare and Publish the Scientific Papers in Biomedical Journals. Acta Inform Med. 2011;19(2):68–79. doi:10.4555/aim.2011.19.68-79.
24. https://radiosarajevo.ba/metromahala/teme/na-listi-najcitiranijih-naucnih-autora-na-svijetu-nalazi-se-12-clanova--anu-bih/437937. Accessed at November 25, 2021.
25. https://www.fokus.ba/vijesti/bih/jedanaest-clanova-ianu-bih-medju-najcitiranijim-naucnicima-u-svijetu/2196631/. Accessed at November 25, 2021.

HOW TO CORRECTLY AND OBJECTIVELY ASSESS SCIENCE AND SCIENTIFIC VALIDITY OF SCIENTIFIC RESEARCH IN PRACTICE?

Asim Kurjak[1,2,3]

[1]International Academy of Sciences and Arts in Bosnia and Herzegovina, Sarajevo, Bosnia and Herzegovina

[2]Sarajevo Medical School, University Sarajevo School of Science and Technology, Ilidza/Sarajevo, Bosnia and Herzegovina

[3]Academy of Medical Sciences of Bosnia and Herzegovina, Sarajevo, Bosnia and Herzegovina

Corresponding author: Professor Emeritus Asim Kurjak, MD, PhD. International Academy of Science and Art in Bosnia and Herzegovina, Sarajevo, Bosnia and Herzegovina. E-mail: asim.kurjak1@yahoo.com. ORCID ID: http//www.orcid.org/0000-0002-1680-3030.

ABSTRACT

It is very well known that science is world activity and that there is no good and bad work in the field of scientific research. Nowadays scientific productivity of the individuals, learned societies on regional or state level are measurable parameters. In most of the systems it does include the number of original scientifi papers, quality of journals measured by impact factor and scientific citation index (1-4). There are also additional measurable parameters but for the purpose of this meeting we will avoid discussion about them. New field of scientometrics using the help of impartial and ruthless machines (computers) do help very significantly in evaluation of scientific productivity anywhere in the world. Unfortunately, there are many misused conclusions and interpretation on the data offered by computers. It is clear that some vital important changes are urgently needed. Today's conference should use rare opportunity having together experts in the field to discuss the problems visible now. This author intends to discuss facts and doubts in writing review articles and chapters in the book (5). Some important flexibility in citation, in particular self citation, should be analyzed. An illustrative examples from author's own experience will be shown and discussed at the meeting.

Keywords: Scientific research, scientific validity, assess of science.

REFERENCES

1. Masic I, Medical Publication and Scientometrics, J Res Med

Sci. 2013; 18(6): 516–521.
2. Masic I, Jankovic SM, Kurjak A, Donev DM, Zildzic M, Sinanovic O, Hozo I, et al. Guidelines for Editing Biomedical Journals: Recommendation by Academy of Medical Sciences of Bosnia and Herzegovina. Acta Inform Med. 2020 Dec; 28(4): 232-236. doi: 10.5455/aim.2020.28.232-236.
3. Masic I, Begic E, Donev MD, Gajovic S, Gasparyan YA, Jakovljevic M, Milosevic BD, Sinanovic O, Sokolovic S, Uzunovic S, Zerem E. Sarajevo Declaration on Integrity and Visibility of Scholarly Journals. Croat Med J. 2016; 57: 527-529. doi: 10.3325/cmj.2016.57.527.529.
4. Gustavii B. How to Write and Illustrate Scientific Papers. 2nd ed. Cambridge University Press, Cambridge-New York, 2008: 1-2.10, Jacobsen HK. Health Research Methods: a Practical Guide. Jones & Barlett Learning, LLC, Ontario, 2012: 9-237.
5. Masic I. Writing and Editing of Scientific Papers Using BOMRAD Structured Form and Proper Style of Reference's Citation. Inter J Biomed Healthc. 2021; 9(1): 4-14. doi: 10.5455/ijbh.2021.9.4-14.

SCIENTOMETRIC AS A APPROPRIATE METHOD OF VALIDATION OF SCIENTIFIC CONTENTS

Izet Masic[1,2]

[1]Academy of Medical Sciences of Bosnia and Herzegovina, Sarajevo, Bosnia and Herzegovina

[2]International Academy of Sciences and Arts in Bosnia and Herzegovina, Sarajevo, Bosnia and Herzegovina

Corresponding author: Professor Emeritus Izet Masic, MD, PhD, FWAAS, FEASA, FIAHSI, FEFMI, FACMI. Academy of Medical Sciences of Bosnia and Herzegovina, Sarajevo, Bosnia and Herzegovina. E-mail: izetmasic@gmail.com. ORCID ID: http//www.orcid.org/0000-0002-9080-5456.

ABSTRACT

Background: Fundamental components of scientific writing are accuracy, integrity, clarity, conciseness and honesty (1, 2). Academic honesty means that the work scientist submits, in whatever form, is original. Science that analyzes scientific papers and their citation in the scientific journals is called scientometrics. Citation provides guidelines for scientific work, because it stimulates scientists to deal with the most current areas of research, and organizes scientific article at the world level, or shapes and directs it. Citation is influenced by: article quality, understanding of the article, language in which the article is written, loyalty to a group of researchers, article type, etc. Scientific research is the only real way and method for the proliferation of true knowledge in all spheres of science, but also in academic institutions. The ability to study a scientific problem is the highest level of knowledge. Medical, and in a broader sense biomedical scientific research, is a process of systematic research of current and important health problems related to defined aspects of physical, mental or social well-being of the population of local, regional or global character. **Objective:** To present the current tools available in scientometry for teh evaluation of scientific validy of published articles. Explain the purpose and process of medical research and the concurent preparation and publication of the obtained results. **Methods:** Author analyzed deposited papers within the topic scientometrics and used descriptive method of reviewing important facts about experiences with scientometrics in the scientific and academic practice, also, explained the process of medical research and BOMRAD form of preparation of article for publication in appropriate indexed journals. **Discussion:** The format of scientific articles can vary greatly from journal to journal. Nevertheless, many of them follow the IMRAD scheme, recommended by the International Committee of Medical Journal Editors (ICMJE) (3, 4). Scientometrics analyzes scientific articles and their citation in a selected sample of scientific journals. Bibliometrics was introduced in the 1970s to denote quantitative research of communication processes by applying appropriate mathematical and statistical methods to books and other communication media. Bibliometric methods are used for quantitative analysis of written materials. Bibliometrics is closely related to one broader term „informetry". Informetry: In 1979, Otto Nacke introduced a new metric concept of informetry, which seeks to include part of the information sciences aimed at measuring the phenomenon of information, the application of mathematical methods in solving problems of disciplines, bibliometrics and information retrieval. Some of the indicators used in the evaluation of scientific work are: Impact factor; Citation of the article; Journal citations; Number and order of authors, etc. Impact Factor is the number of citations of articles published in the journal during the previous two 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, the journal distribution system. In order to be considered as significant scientific work, it is important to be carried out according to established rules and guided steps. Although scientific writing is a complex and arduous process, it should be clear, accurate, honest and concise. Since research in medicine can affect the improvement of clinical and public health practices, it is necessary to conduct them. In order to be considered a significant scientific work, it is important that they be conducted according to certain rules and guided by the steps presented in our work. Only quality research with exact results offers the scientific community new information about the examined problem, and the researcher personal satisfaction, the possibility of communicating and conducting scientific dialogue with other members of the academic community, and opening opportunities to receive critical review of those who have insight into the research. In this article we pointed that h-Index presents one of a set of valuable measures to determine scientific excellence (bibliometrics recognize also m-value as useful). Although the h-Index is a better measure than a citation impact factor (IF), it is still based on the opinions of other authors. Google Scholar index is very common in academic practice, but there are differnt opinions of experts

about its advantages and disadvantages if compare it with Scopus' h-Index quality. **Conclusion:** This paper analyzes the major components of scientometrics, the basic mechanisms of citations in medical publications, as an opposite to the primary goal of scientific enterprise.

Key words: Scientometrics, h-Index, Google Scholar index

REFERENCES

1. Masic I. How to Search, Write, Prepare and Publish the Scientific Papers in Biomedical Journals. Acta Inform Med. 2011;19(2):68–79. doi:10.4555/aim.2011.19.68-79.
2. Masic I. Medical publication and scientometrics. J Res Med Sci. 2013 Jun;18(6):516-521.
3. World Association of Medical Editors. WAME recommendations on Publication Ethics and Policies for Medical Journals. Available: http://www.wame.org/resources/ethics-resources. Accessed: 06/02/144
4. Masic I. Writing and Editing of Scientific Papers Using BOMRAD Structured Form and Proper Style of Reference's Citation. Inter J Biomed Healthc. 2021; 9(1): 4-14. doi: 10.5455/ijbh.2021.9.4-14.
5. Masic I. Scientometric analysis: A technical need for medical science researchers either as authors or as peer reviewers. J Res Pharm Pract. 2016 Jan-Mar; 5(1): 1-6. doi: 10.4103/2279-042X.176562.

INFLATION OF CO-AUTHORSHIP AS THE MAIN SOURCE OF SCIENTOMETRIC (NON) OBJECTIVITY

Slobodan M. Jankovic[1], Izet Masic[2]

[1]Academy of Medical Sciences of Bosnia and Herzegovina, Sarajevo; Bosnia and Herzegovina

[2]Faculty of Medical Sciences, University of Kragujevac, Kragujevac, Serbia

[3]Faculty of Medicine, University of Sarajevo; Sarajevo, Bosnia and Herzegovina

Corresponding author: Professor Slobodan M. Jankovic, MD, PhD. Faculty of Medical Sciences, University of Kragujevac, Kragujevac, Serbia. E-mail: slobnera@gmail.com. ORCID ID: http/www.orcid.org/0000-0002-1519-8828.

Background: Co-authorship only partially reflects research collaboration; it is also the result of other phenomena besides collaboration, such as social relations, frequency of communications, financial and other (e.g. reputation) resources invested by principal author, etc (1-5). **Objective**: The aim of this article was to analyze bias introduced into scientometric indicators and benchmarking by publications with 30 or more co-authors. **Methods**: After identifying a subset of publications cited by PubMed with 30 or more co-authors, a sample of 100 publications was extracted randomly. One of the authors from each of the extracted publications was also chosen randomly, forming final study sample of 100 scientists. All citations of the chosen authors listed at their Google scholar profiles were analyzed from the aspect whether they could be ascribed to publications with more than 30 authors, or not, and what was contribution of such publications to scientometric rank of the authors. **Results**: While publications with more than 30 authors make on average only 10.8% of all publications of analyzed authors, they contributed to 46.6% of their citations and to 48.4% of their Hirsh index values. This effect was more pronounced among authors with shorter scientific carriers, whose Hirsh index was boosted with such publications. **Conclusion**: Publications with large (more than 30) number of co-authors are on average cited much more frequently. Citations of publications with large number of co-authors boost scientometric rank of an author disproportionally to his or her contribution to such publications: while it is obvious that the contribution is 1/n (where n is number of co-authors), he or she is credited with full number of citations of such publication (c), instead with c/n, which is logical and rightful. Using rankings of scientists without removing such obvious bias caused by multiple co-authorship may have long-term deleterious influence on development of science.

Keywords: co-authorship, scientometrics, bias, benchmarking.

REFERENCES

1. Tahamtan I, Safipour Afshar A, Ahamdzadeh K. Factors affecting number of citations: a comprehensive review of the literature. Scientometrics. 2016; 107: 1195–1225.
2. Masic I, Jankovic SM. Inflated Co-authorship Introduces Bias to Current Scientometric Indices. Med Arch. 2021; 75(4): 248-255. doi: 10.5455/medarh.2021.75.248-255.
3. Cutas D, Shaw D. Writers Blocked: On the Wrongs of Research Co-authorship and Some Possible Strategies for Improvement. Sci Eng Ethics. 2015; 21(5): 1315-1329.
4. Ponomariov B, Boardman C. What is co-authorship? Scientometrics. 2016; 109: 1939–1963.
5. Grinäv AV. The Disadvantages of Using Scientometric Indicators in the Digital Age. IOP Conf Ser Mater Sci Eng. 2020; 940: 012149.

IMPACT OF THE COVID-19 PANDEMIC ON SCIENTIFIC RESEARCH IN THE BIOMEDICAL SCIENCES

Osman Sinanovic[1,2,3,4]

[1]Medical Faculty, University of Tuzla, Tuzla, Bosnia and Herzegovina

[2]Sarajevo Medical School, University Sarajevo School of Science and Technology, Ilidza/Sarajevo, Bosnia and Herzegovina

[3]Academy of Medical Sciences of Bosnia and Herzegovina, Sarajevo, Bosnia and Herzegovina

[4]International Academy of Sciences and Arts in Bosnia and Herzegovina, Sarajevo, Bosnia and Herzegovina

Corresponding author: Professor Emeritus, MD, PhD. Medical Faculty, University of Tuzla, Tuzla, Bosnia and Herzegovina. E.mail: osman.sinanovic1@gmail.com. ORCID ID: http//www.orcid.org/0000-0001-8957-7284.

ABSTRACT

We will not know the long-term impact of the SARS-CoV-2

viral outbreak for some time yet, but many of scientists have already begun to feel the effects - not only on their daily lives but also on their scientific work in general contecst (1-4). With partial or complete institutional shutdowns in countries worldwide, the global COVID-19 health crisis has rapidly impacted the life science landscape, including their patterns of work. Some scientists were unable to carry out experiments because of COVID-19-related working restrictions, especially in the first year of pandemic and periods of pandemic worsening or because they need to look after children in connection with the closure of schools and kindergartens. This was a frightening feeling, especially for young scientist, who usually have short-term contratcts and may worry about their future careers. Many basic research labs quickly tuned their priorities to study aspects of SARS-CoV-2. For example, recent advances in sequencing technology allowed researchers to rapidly compare viral genomes from patients at the early stages of the outbreak to trace its origin to bats — knowledge that could help prevent the future outbreak of another novel coronavirus. The COVID-19 pandemic has mobilised researchers worldwide on a scale and timeframe that have never been seen before for one specific disease. The number of COVID-19 manuscripts being submitted for peer review has also greatly increased. For instance, The Journal of the American Medical Association has indicated that more than 11 000 manuscripts were submitted between Jan 1 and June 1, 2020, whereas around 4000 manuscripts were submitted during the same period in 2019. Virtually the entire increase has been related to manuscripts focused on COVID-19, with about one-third representing original research (full-length manuscripts, brief reports, and research letters) and two-thirds representing opinion (Viewpoints, A Piece of My Mind) and reviews. Scientific journals have accelerated their peer review process to expedite the publications of studies for COVID-19· One analysis shows that the time between submission and publication of articles on COVID-19 has decreased on average by around 50%, from 117 days down to 60. This analysis also showed that the time to publication for research not related to COVID-19 has remained unaffected, but it is probable that the number of research articles unrelated to COVID-19 has dropped considerably, with COVID-19 predominating in receipt of funding and attention from the research community.

Keywords: COVID-19 pandemic, Imapct, Scientific research, Biomedical sciences.

REFERENCES

1. Korbel JO, Stegle O. Effects of the COVID-19 pandemic on life scintists. Genome Biology. 2020; 21(1): 113. doi: 10.1186/s13059-020-02031-1.
2. Editorial. Science in the time of coronavirus. Nature methds. 2020; 17: 355. https://doi.org/10.1038/s41592-020-0849-1
3. Bauchner H, Fontanarosa PB, Golub RM. Editorial evaluation and peer review during a pandemic: how journals maintain standards. JAMA. 2020; 324: 453-454.
4. Horbach SPJM. Pandemic publishing: medical journals strongly speed up their publication process for Covid-19. Quant Sci Stud. 2020; 1: 1056-1057.

AVOIDABLE AND UNAVOIDABLE RESEARCH WASTE IN (BIOMEDICAL) RESEARCH

Benjamin Djulbegovic

Beckman Research Institute, City of Hope, Duarte, CA, USA

Corresponding author: Benjamin Djulbegovic, MD, PhD. Beckman Research Institute, City of Hope, Duarte, CA, USA. E-mail: bdjulbegovic@coh.org. ORCID ID: https://orcid.org/0000-0003-0671-1447.

ABSTRACT

We live in an unprecedented time of scientific progress, which is increasingly dominated by a paradox: more money is spent on health care research, development and delivery, and yet health outcomes, quality of care and quality of research is by all measures considered suboptimal. The efficiency of current research system increasingly undermines public trust in science, which ultimately leads to corrosive effect on societies' well-being, as witnessed during the COVID19 pandemic(1-4). The research system must improve. It is responsibility of scientific community to identify "good" from "bad" research practices and to weed out the latter. However, the public also needs to understand that 100% efficient research is not theoretically possible, remain skeptical about exaggerated claims ("hypes") as good science typically progresses incrementally. To realize these goals, this talk will review practices of avoidable and unavoidable research waste and call for establishing new metrics (index of research waste). To improve research system each country/organization should undertake regular audits of its research practice activities and make data publicly available. Collecting these data may inform development of research waste metrics to complement traditional scientometric indices that do not capture this important dimension of scientific activity (5-7).

Keywords: Biomedical research, Avoidable and Unavoidable Waste.

REFERENCES

1. Masic I, Medical Publication and Scientometrics, J Res Med Sci. 2013; 18(6): 516–521.
2. Masic I, Jankovic SM, Kurjak A, Donev DM, Zildzic M, Sinanovic O, Hozo I, et al. Guidelines for Editing Biomedical Journals: Recommendation by Academy of Medical Sciences of Bosnia and Herzegovina. Acta Inform Med. 2020 Dec; 28(4): 232-236. doi: 10.5455/aim.2020.28.232-236.
3. Masic I, Begic E, Donev MD, Gajovic S, Gasparyan YA, Jakovljevic M, Milosevic BD, Sinanovic O, Sokolovic S, Uzunovic S, Zerem E. Sarajevo Declaration on Integrity and Visibility of Scholarly Journals. Croat Med J. 2016; 57: 527-529. doi: 10.3325/cmj.2016.57.527.529.
4. Masic I, Jankovic SM. Meta-Analysing Methodological Quality of Published Research: Importance and Effectiveness. Stud Health Technol Inform. 2020 Jun 26; 272: 229-232. doi: 10.3233/SHTI200536.
5. Chalmers I, Bracken MB, Djulbegovic B, et al. How to in-

crease value and reduce waste when research priorities are set. The Lancet. 2014;383(9912):156-165.
6. Yao L, Guyatt GH, Djulbegovic B. Can we trust strong recommendations based on low quality evidence? BMJ. 2021;375:n2833.
7. Djulbegovic B, Kumar A, Glasziou P, Miladinovic B, Chalmers I. Medical research: Trial unpredictability yields predictable therapy gains. . Nature. 2013;500(7463):395-396.

INFLUENCE OF SCIENTOMETRY ON ACADEMIC PROMOTION AND RANKING OF UNIVERSITIES

Enver Zerem[1], Suad Kunosic[2]

[1]Department of Medical Sciences, Academy of Sciences and Arts of Bosnia and Herzegovina, Sarajevo, Bosnia and Herzegovina

[2]Department of Physics, Faculty of Natural Sciences and Mathematics, University of Tuzla, Bosnia and Herzegovina

Corresponding author: Professor Enver Zerem, MD, PhD, Department of Medical Sciences, The Academy of Sciences and Arts of Bosnia and Herzegovina, Bistrik 7, 71000 Sarajevo, Bosnia and Herzegovina; Email: zerem@live.com ORCID: 0000-0001-6906-3630

ABSTRACT

Introduction: The product of scientific research is mainly information published in scientific journals and they are the basis for the dissemination of knowledge, as well as the basic criteria for academic and scientific evaluation, raising of funds for scientific research and career advancement. The key question, which has always remained elusive in science and higher education, is on the basis of which criteria the quality of research is measured, and how to ensure the fulfilment of standards so that all provide adequate quality of resulting competencies. Since scientific research through innovations, patents and publications can be much more accurately measured and evaluated, compared to educational and other activities of universities, these parameters often appear as predetermining measures in evaluating the quality of higher education. Significant financial resources are being invested in the formation of various international university ranking lists. The most prestigious ranking lists of universities in the world publish their results once or twice a year. Relevant university ranking lists consider various parameters, but for most universities (with the partial exception of the first 100) the number of publications and the impact that these publications achieve through citation are of the greatest importance in ranking. The competition to take a prestigious place on the world ranking list of top universities is increasingly heating up and taking on the characteristics of a battle for status and various kinds of domination of the most developed countries in the world. It is clear that numerous shortcomings can be found in the criteria for forming university ranking lists, but the ranking systems, whether we like it or not, are becoming part of the reality of the existence and work of thousands of universities in the world. The fact is that investments in scientific research work affect the improvement of scientific production. However, without the introduction of internationally recognized scientific criteria in the evaluation of scientific research, and the coordination of academic progress in accordance with the criteria, even the current miserable investment in science is essentially a useless waste of taxpayers' money. The existence of an effective regulatory institution at the level of Bosnia and Herzegovina, which would establish unique criteria in higher education at the state level with the possession of competencies and mechanisms for effective supervision of their implementation, would contribute to improving the situation in science and higher education.

Key words: internationally recognized criteria, academic community, education, ranking of universities.

REFERCENCES

1. Dixon AK. Publishing and academic promotion. Singapore Med J. 2009; 50(9): 847-850.
2. Horton R. Publication and promotion. A fair reward. Lancet. 1998; 352: 892.
3. Marušić A, Marušić M. Authorship criteria and academic reward. Lancet. 1999; 353: 1713-1714.
4. Zerem E. The ranking of scientists based on scientific publications assessment. J Biomed Inform. 2017; 75: 107-109. doi: 10.1016/j.jbi.2017.10.007.
5. Zerem E. Right criteria for academia in Bosnia and Herzegovina. Lancet. 2013; 382: 128.
6. Zerem E. Kunosić S. The ranking of scientists: Computational calculation of Z-score. J Biomed Inform. 2018; 81: 133–134. doi: 10.1016/j.jbi.2018.04.002.
7. Kunosić S, Čeke D, Zerem E. Advantages and disadvantages of the webometrics ranking system. In: Kunosić S., Zerem E. (eds.) Scientometrics Recent Advances (2019). https://www.intechopen.com/books/scientometrics-recent-advances/advantages-and-disadvantages-of-the-webometrics-ranking-system.

PREDATORY PUBLISHING AND PREDATORS – ALMOST UNSOLVABLE PROBLEM OF TODAY IN BIOMEDICAL SCIENCES

Doncho Donev

[1]Academy of Medical Sciences of Bosnia and Herzegovina, Sarajevo, Bosnia and Herzegovina

[2]Institute of Social Medicine, Faculty of Medicine, Ss Cyril and Methodius University, Skopje, R.N. Macedonia

Corresponding author : Doncho M. Donev, M.D., Ph.D., Professor Emeritus. Faculty of Medicine, Ss Cyril and Methodius University, Skopje, R.N. Macedonia. E-mail: dmdonev@gmail.com; ORCID ID: https://orcid.org/0000-0002-5237-443X

ABSTRACT

Background. The number of predatory publishers and so-called hijacked or fraudulent journals is constantly increasing in the last more than ten years emphasizing the iceberg phenomenon of predatory publishing. Predatory journals can harm scientific practice and undermine scientific integrity, quality, and credibility, especially if those journals penetrate prestigious databases. Schol-

arly communication is at serious risk and threats to the quality of published articles when scholars and authors submit and publish their manuscripts in predatory journals. **Objective:** To point out the problem of predatory publishing with causes and consequences, main characteristics and features of fake journals, and how to support and help authors to distinguish predatory journals from open access journals to prevent and avoid publishing in such journals. **Methods:** Exploring Beall's and Cabell's lists of predatory publishers and journals and review of the relevant published literature, as well as personal experience and observations of the author. **Results:** There is no unified and generally accepted definition in the literature on predatory publishers and fraudulent journals, as well as an efficient strategy for prevention, control, and solving the problem of predatory publishing. Jeffrey Beall, an American librarian and library scientist from Denver, University of Colorado, has drawn attention and initiated broad discussions in the scientific community in 2010 on predatory open access publishing. He composed and maintained widely known Beall's lists of potentially predatory publishers and open-access predatory journals. Predatory publishers and journals attract and recruit authors by false or misleading information and a lack of transparency. They prioritize self-interest with aggressive practices and accept submitted manuscripts for prompt publishing — along with authors' publication fees — without peer review and promised quality checks for issues such as plagiarism or ethical approval. Jeffrey Beall made a profound influence and the debate he initiated is continuing in the scientific community with an increased number of authors and published articles on this burning and unresolved issue in the scientific community. Specific recommendations are necessary to be continuously given to researchers, educational institutions, and prestigious databases advising them to review their working relations with predatory publishers and journals. Scientific societies and publishers (including Springer Nature) have helped to establish the 'Think. Check. Submit.' campaign to guide authors. **Conclusion:** Predatory publishers and hijacked journals are a global threat to the scientific community with deviation from best editorial and publication practices. Threats and consequences of fake journals are numerous and multidimensional. The main barriers to combating predatory publishing are the lack of an agreed definition and coherent strategy with efficient interventions. Awareness-raising in the scientific community and continuous education of authors about predatory publishers and journals on how to differentiate trustworthy-reliable journals and predatory ones and to avoid predatory journals is still the central point in the strategy toward solving the problem of predatory publishing. There are a large number of checklists to help authors to detect potential predators and guard, especially young scientists, against publishing in predatory journals. The academic and scientific community must set the criteria for scientific advancement by not recognizing and valuing the articles published in the predatory journals. Besides academic institutions and researchers in the scientific societies, active contribution to combat predatory publishing is necessary by the publishing associations, research funders, policymakers, libraries, and other interested parties and stakeholders at local, national, and international levels.

Keywords: predatory publishing; Beall's lists; fraudulent, hijacked journals; Gold open access, pseudoscience.

REFERENCES

1. Beall J. Open access, research communities, and defense against predatory journals. Cent Asian J Med Hypotheses Ethics 2021;2(1):14-17. https://doi.org/10.47316/cajmhe.2021.2.1.02
2. Beall J. Predatory Publishing: Jeffrey Beall. Himmelfarb Health Sciences Library. Available at: https://guides.himmelfarb.gwu.edu/PredatoryPublishing/Beall Accessed: Nov 25, 2021.
3. COPE Council. COPE Discussion Document - Predatory Publishing. COPE, Nov 2019. Available at: https://publicationethics.org/files/cope_dd_a4_pred_publishing_nov19_screenaw.pdf Accessed: 29.11.2021.
4. Stop Predatory Journals. List of Predatory Journals. Available at: https://predatoryjournals.com/journals/ Accessed: Nov 26, 2021.
5. Stop Predatory Journals. List of Predatory Publishers. Available at: https://predatoryjournals.com/publishers/ Accessed: Nov 26, 2021.
6. Elmore SA, Weston EH. Predatory Journals: What They Are and How to Avoid Them. Toxicol Pathol. 2020 Jun; 48(4): 607–610. DOI: 10.1177/0192623320920209
7. Grudniewicz A, Moher D, Lalu MM. Predatory journals: no definition, no defense. Nature, Dec. 12, 2019; 576: 210-2. Available at: https://www.nature.com/articles/d41586-019-03759-y Accessed: 27.11.2021.
8. The University of Cambridge. Predatory publishers. Office of the Scholarly Communication University of Cambridge. Available at: https://osc.cam.ac.uk/about-scholarly-communication/author-tools/considerations-when-choosing-journal/predatory-publishers Accessed: 27.11.2021.
9. Australian National U. Predatory publishing. ANU Library. Available at: https://anulib.anu.edu.au/files/guidance/predatory-publishing.pdf Accessed: Nov. 27, 2021.
10. Gann L. Q. What is a Predatory Journal? How do I know if I'm submitting to a predatory journal? MD Anderson Center Research Medical Library of the University of Texas, Jun 10, 2021. Available at: https://mdanderson.libanswers.com/faq/206446 Accessed 29.11.2021.
11. Megan O'Donnell. What is a predatory publisher? University Library IOWA State University Available at: https://instr.iastate.libguides.com/predatory Accessed: 29.11.2021.
12. Cukier S, Helal L, Rice DB, et al. Checklists to detect potential predatory biomedical journals: a systematic review. BMC Medicine, 2020;18(104): Available at: https://bmcmedicine.biomedcentral.com/articles/10.1186/s12916-020-01566-1 Accessed: 28.11.2021.
13. The University of Free State. Open Access Predatory Publishing. UFS Library & Information Services, Nov 18, 2021. Available at: https://ufs.libguides.com/c.php?g=673189&p=4742305 Accessed: 28.11.2021.
14. DSI – NRF Centre of Excellence in Scientometrics and STI Policy. How to identify and respond to the continuing threat of predatory publishers and journals. SciBytes@SciSTIP Nr

3. Available at: https://ufs.libguides.com/ld.php?content_id=62821980 Accessed: 28.11.2021.
15. Oviedo-Garcia MA. Journal citation reports and the definition of a predatory journal: The case of the Multidisciplinary Digital Publishing Institute (MDPI). Research Evaluation, July 2021;30(3):405–19. DOI: https://doi.org/10.1093/reseval/rvab020
16. Krawczyk F, Kulczycki E. How is open access accused of being predatory? The impact of Beall's lists of predatory journals on academic publishing. The Journal of Academic Librarianship, March 2021; 47(2): 1-11. Available at: https://www.sciencedirect.com/science/article/pii/S0099133320301622 Accessed: 28.11.2021.
17. Donev D. Predatory in Scientific Publishing-a Burning Issue in Science. Int J Biomed Healthc. 2020; 8(2): 108-112. DOI: 10.5455/ijbh.2020.8.108-112
18. Duc NM, Hiep DV, Thong PM, Zunic L, Zildzic M, Donev D, Jankovic S, Hozo I, Masic I. Predatory Open Access Journals are Indexed in Reputable Databases: a Revisiting Issue or an Unsolved Problem. Med. Arch., Aug. 2020; 74(4): 318-22. DOI: https://10.5455/medarh.2020.74.318-322
19. Masic I. Predatory Publishing – Experience with OMICS International. Editorial. Medical Archives, Oct 2017; 71(5): 304-7. DOI: 10.5455/medarh.2017.71.304-307.
20. Masic I. Predatory Journals and Publishers – Dilemmas: How to Assess it and How to Avoid it? Editorial. Med Arch, 2021 OCT; 75(5): 328-34. DOI: 10.5455/medarh.2021.75.328-334

RELATIONSHIP BETWEEN EDUCATION AND FAMILY MEDICINE PRACTICE. WHAT DID WE LEARN IN COVID-19 PANDEMIC?

Muharem Zildzic

Academy of Medical Sciences of Bosnia and Herzegovina, Sarajevo, Bosnia and Herzegovina

Corresponding author : Professor Muharem Zildzic, MD, PhD. Academy of Medical Sciences of Bosnia and Herzegovina, Sarajevo, Bosnia and Herzegovina. E-mail. zildzic@yahoo.com. ORCID ID: http//www.orcid.org/0000-0001-5418-2274.

ABSTRACT

Background. At the end of the last century Alma-Ata Declaration recommended strengthening primary health care. With the "health for all" statement, general practice and family medicine came into the focus. At the beginning of the 21st century, the reform of the health care system began with the reinforcement of general practice/family medicine. WONCA Europe definition sets educational criteria and standards in practice. The WHO and WONCA Association made recommendations for the development of academic departments in family medicine. Family medicine is implemented as an independent, academic and scientific discipline with specific educational and research content.**Objective**. The aim of this paper is to analyze the implementation of family medicine in Bosnia and Herzegovina according to EURACT educational agenda.The second goal is to assess how the acquired knowledge, skills and learned competencies are applied in practice in reformed healthcare centers, particularly during the COVID-19 pandemic. **Methods**.The entire teaching system in undergraduate, postgraduate and continuing education in the department of Family Medicine in Tuzla was evaluated through the department reports and published information, as well as professional papers and publications. Published papers in European journals during the 2020 and 2021 COVID-19 pandemic and the process of education and the family medicine practice were analysed. **Results**. In Bosnia and Herzegovina, family medicine has been successfully implemented as a basic, academic and scientific discipline in the reformed system of primary health care. According to the principles of the EURACT educational agenda academic and educational activities have been implemented. New educational methods and modules for acquiring skills of 6 key competencies have been introduced. For the successful application of "patient-oriented clinical practice" in their practical work, family medicine teams met the criteria for full accreditation. In the last 6 years, delays and obstacles in practical work have been registered, and the main factors of obstruction are at the level of politics, law and economy. The COVID-19 pandemic led to almost complete collapse of family medicine practice mostly because telemedicine principles were not applied. **Conclusion**. According to the recommendations of WHO, WONKA and EURACT, family medicine has been implemented in Bosnia and Herzegovina as a major academic and scientific discipline in the reformed primary health care system. New educational methods and models for acquiring skills of 6 key competencies had been introduced. In the last 6 years, there has been a stagnation in the further implementation of practical work. The main factors of obstruction are at the level of politics, law and economics. During the pandemic, the teaching process was significantly changed due to the difficulty of applying all the practical skills described in the definition of P / O medicine. Telemedicine educational modules have not been introduced. A pandemic significantly changes the content and methods of learning.

Keywords: Family medicine, education, practice, telemedicine, Covid-19.

REFERENCES

1. Council of the European Academy of teachers in General Medicine. WONKA.Greece, 2005. Education Adenda. 2005, Greece. Retrieved from: https://euract.woncaeurope.org/sites/euractdev/files/documents/publications/official-documents/euract-educationalagenda.pdf
2. Zildzić M, Masić I, Hasanović M, et al. Edukacija iz porodične medicine-novi pristup. Med Arh. 2001;55(3):171-4.
3. Bulc M, Svab I, Radic S, et al. Faculty development for teachers of family medicine in Europe: reflections on 16 years' experience with the international Bled course. Eur J Gen Pract. 2009;15(2):69-73. doi: 10.1080/13814780903071930.
4. Maudsley G. Strivens J Promoting professional knowledge, experiential learning and critical thinking for medical students. Med Educ 2000,34 (7) 535-44) doi: 10.1046/j.1365-2923.2000.00632
5. Morales-Mann et, Kaitell CA, Problem-based learning in a

new Canadian curriculum. J Adv Nurs. 2001 Jan; 33(1):13-9 doi: 10.1046/j.1365-2648.2001.01633
6. Masic I. et al. Public health aspects of the family medicine concepts in South eastern europe. Mater Sociomed. 2014;26(4):277-286. doi:10.5455/msm.2014.26.277-286
7. Masic I. E-learning as a new method of medical education. Acta Inform Med. 2008;16(2):102-17. doi: 10.5455/aim.2008.16.102-117
8. Masic Z, Novo A, Masic I. et al. Distance learning at biomedical faculties in Bosnia & Herzegovina. Stud Health Technol Inform. 2005.
9. Windak A, Frese T, Hummers E, et al. Academic general practice/family medicine in times of COVID-19 - Perspective of WONCA Europe. Eur J Gen Pract. 2020 Dec;26(1):182-188. doi: 10.1080/13814788.2020.1855136.
10. Rawaf S, Allen LN, Stigler FL, et al. Lessons on the COVID-19 pandemic, for and by primary care professionals worldwide. Eur J Gen Pract. 2020;26(1):129-133. doi:10.1080/13814788.2020.1820479

WE NEED MORE EFFICIENT COMMUNICATION OF RESEARCH RESULTS: WHAT CAN WE DO TO IMPROVE IT?

Sylwia Ufnalska

Honorary Member of European Association of Science Editors (EASE), Poznań, Poland

Corresponding author: Sylwia Ufnalska, Honorary Member of the European Association of Science Editors (EASE), Poznan, Poland. E-mail: sylwia.ufnalska @gmail.com. ORCID ID: http/www.orcid.org/0000-0000-0001-6240-5781.

ABSTRACT

In October 2020, as a member of the EASE Council, I launched the campaign "Help scientists save time" (1, 2). It aimed to minimize editorial requirements for initial manuscript submission. This can be crucial for faster progress in scientific research, because many manuscripts are rejected and often must be reformatted before submission to another journal. That is why we promote simplification of the requirements and placing the EASE Quick-Check Table at the beginning of instructions for authors in each journal (3, 4). The Table makes it easier for scientists to search for basic information needed for manuscript submission. The table has already been translated into 15 languages. Communication of research results can be also improved by the use of EASE Guidelines for Authors and Translators of Scientific Articles (5). The main part of this useful, readable document is now freely available in 30 languages. The Italian Chapter of EASE has decided to translate also its appendices and additional information (pages e7-e16). This may facilitate further streamlining of the publishing process. Moreover, "Golden rules for scholarly journal editors" (6) and other helpful EASE publications for scientists, translators, and editors have been briefly presented in bilingual slides at a webinar for the Ukrainian Chapter of EASE (7). The slides have been translated also into Japanese (8), so other EASE Chapters can consider such a possibility likewise. Many authors have suggested interesting improvements, too. These include changing the IMRAD structure into BOMRAD (i.e. replacing Introduction by two sections: Background and Objectives), complete elimination of pre-submission formatting and cover letters (9, 10), creation of centralized websites that serve many journals, to allow swift resubmissions from one journal to the next (11), and publishing full-text scientific articles in HTML (not just PDF) to facilitate machine translation (12). All this can contribute to improving the efficiency of scientific communication worldwide and, consequently, to solving urgent problems, e.g. related to environmental pollution or the COVID-19 pandemic (13).

Keywords: EASE, Communication of research results, Science editing, Science publishing.

REFERENCES

1. EASE Council Post: Sylwia Ufnalska on our campaign "Help scientists save time". 30 October 2020. http://ese-bookshelf.blogspot.com/2020/10/ease-council-post-sylwia-ufnalska-on.html
2. Ufnalska S, Terry A. Proposed universal framework for more user-friendly author instructions. European Science Editing 2020; 46: e53477. https://doi.org/10.3897/ese.2020.e534772
3. EASE Quick-Check Table for Submissions. European Association of Science Editors. https://ease.org.uk/publications/ease-statements-resources/quick-check-table-for-submissions/
4. Ufnalska S (2020) Help scientists save time for research by minimizing editorial requirements for initial manuscript submission. European Science Editing 46: e60083. https://doi.org/10.3897/ese.2020.e60083
5. EASE Guidelines for Authors and Translators of Scientific Articles to be Published in English. European Association of Science Editors. https://ease.org.uk/publications/author-guidelines-authors-and-translators/
6. Ufnalska SB, Polderman A. Golden rules for scholarly journal editors. European Science Editing 2014; 40(3):65 http://europeanscienceediting.org.uk/wp-content/uploads/2016/05/essay_goldenrules.p
7. Ufnalska S, Izarova I. EASE Quick-Check Table and other resources for journal editors. May 2021. https://www.slideshare.net/SylwiaU/ease-quick-check-table-and-other-resources-for-journal-authors
8. Masic I, Jankovic SM, Kurjak A, Donev DM, Zildzic M, Sinanovic O, Hozo I, et al. Guidelines for Editing Biomedical Journals: Recommendation by Academy of Medical Sciences of Bosnia and Herzegovina. Acta Inform Med. 2020 Dec; 28(4): 232-236. doi: 10.5455/aim.2020.28.232-236.
9. Masic I, Jankovic SM. The basic principles of editing biomedical scientific journals. Int J Biomed Healthcare. 2020; 8(1): 6-10. https://doi.org/10.5455/ijbh.2020.8.6-10
10. Teixeira da Silva JA. Simplify manuscript submission and optimize authors' resources by eliminating formatting and cover letters. European Science Editing 2020; 46: e52063. https://doi.org/10.3897/ese.2020.e520635
11. Oh H. A call for a more efficient submission process. Publications 2020; 8(3): 40. https://doi.org/10.3390/publications80300406
12. Ansorge L. Let's publish full-text scientific articles in HTML, not just PDF. European Science Editing 2021; 47: e75834. https://doi.org/10.3897/ese.2021.e75834
13. Ufnalska S, Lichtfouse E. Unanswered issues related to the COVID-19 pandemic. Environ Chem Lett 2021; 19, 3523–3524. https://doi.org/10.1007/s10311-021-01249-0

Version 3.1, October 2020
Complete quick-check table developed by Sylwia Ufnalska and Alison Terry, in cooperation with other editors (https://doi.org/10.3897/ese.2020.e53477), and endorsed by the European Association of Science Editors (https://ease.org.uk/publications/ease-statements-resources/quick-check-table-for-submissions/), updated

Brief introduction to the EASE quick-check table
It is intended to make life easier for both authors and editors. When preparing such a table, editors can delete or add some rows if they wish.

Example journal: Quick check for submissions

The following table is provided as an example of how the details in this form may be presented.

BASIC INFORMATION FOR AUTHORS	
GENERAL GUIDELINES	Manuscripts should be COMPLETE, CONCISE and CLEAR (see *EASE Guidelines*, available in many languages). Follow the appropriate reporting guideline, if applicable
WORD LIMITS, etc.	
Body text	≤ X words (justified exceptions allowed)
Abstract	≤ X words; structured for original research (BACKGROUND, OBJECTIVES, METHODS, RESULTS, and CONCLUSIONS)
Keywords	≤ X terms, singular, separated with commas; lowercase except proper names; avoid abbreviations
Highlights (below the abstract)	X-Y bullet points (≤ X words each, describing the study in lay terms)
Tables/figures	≤ X tables/figures in total. Their description (captions, values, units, etc.) should be consistent and informative, with all abbreviations explained
TITLE PAGE INFORMATION	
Title	≤ X characters, with a description of the study type, if relevant
Short running title	≤ X characters
Author names	Full name: given name(s) first, family name last
Affiliation info required	Department, institution, postal address, email
Corresponding author contact details	Indicate with an asterisk, supply phone number
Persistent identifiers of author(s), etc.	ORCID iD(s), identifiers research project(s), if applicable
STRUCTURE OF BODY TEXT, END MATTER, REFERENCES	
Typical headings	Introduction (background and objectives), Methods, Results, Discussion (with a concluding paragraph)
Subheadings	≤ X levels of subheadings, not numbered
Specific wording required for any section	Methods section must include usual ethical approval for human and animal studies (Helsinki/Institutional Review Board compliance, informed consent) and subsection "Statistical analysis", identifying the variables and methods used
End matter (e.g. authorship contributions)	Identify authors by initials in the authorship contributions section (consider using CRediT) and add information about funding, if received
References: maximum number	Not limited (with DOIs, URN, PURL, etc. if applicable)
Referencing style	X style required after acceptance (not for initial submission); for more details and examples, see <URL>. Endnote style can be downloaded here <URL>. Make sure that each citation is complete and accurate

Version 3.1, October 2020
Complete quick-check table developed by Sylwia Ufnalska and Alison Terry, in cooperation with other editors (https://doi.org/10.3897/ese.2020.e53477), and endorsed by the European Association of Science Editors (https://ease.org.uk/publications/ease-statements-resources/quick-check-table-for-submissions/), updated

FORMATTING	
Spelling	UK or US, if consistent
General style	▪ Numbers ≥ 2 as numerals (for exceptions, see *EASE Guidelines*) ▪ Statistics: $p \leq 0.001$, n = ##
SUBMISSION NOTES	
Cover letter required? Specific content?	Not required but text field in the online submission system allows for comments to the editorial office. Inform if the study was presented elsewhere
Links to all required author forms: needed at submission or after acceptance? Signed by all authors or by submitting author?	▪ EASE Ethics Checklist signed by corresponding author, at submission ▪ EASE Form and/or ICMJE COI forms signed by all authors, at submission
Proposed reviewers: optional/mandatory? How many? What details are required?	Optional: suggest/oppose up to 3 potential reviewers (full name, email, institution). Consider diverse peer reviewers in terms of sex/gender, ethnicity and geographical distribution
Tables: separate files?	Include at the end of the manuscript (separate pages)
Figures: separate files? Any formats preferred?	For initial submission, figures can be embedded in the manuscript. If it is accepted, high-resolution files (EPS/TIFF/RAW) will be required
Supplementary files?	Upload any supporting data or other required files for review
Fees for open access, colour, etc.?	Publication fee X. Colour free online but X per figure for print
JOURNAL POLICIES, etc.	
Publication model*	Open access, licence X; fee structure: <URL>
Preprint and prepublication	Articles already available on preprint servers or published in another language can be accepted but this must be declared at the time of submission
Data sharing	Recommended repositories: … Clinical trials must include a data sharing statement; other studies may also do so
Peer review**	External, double-blind review usually by X reviewers. Editors make the final decision
Manuscript acceptance rate and average times	About X% submitted manuscripts are accepted. Average time from submission to first decision after peer review: X months

* Publication models: subscription, hybrid (open access optional for a fee) or open access
** Peer review systems: open, single-blind (authors do not know the identity of reviewers), double-blind (authors do not know the identity of reviewers, and reviewers do not know the identity of authors), triple-bind (also editors do not know the identity of authors/institution)

Translated by …….. (….@....)

Subota

04.12.

Hotel "Holiday", Sala Una

09.30-10.00	Asim Kurjak: KAKO ISPRAVNO I OBJEKTIVNO PROCIJENITI NAUČNOST I NAUČNU VALIDNOST ISTRAŽIVANJA U PRAKSI?
10.00-10.30	Izet Mašić: SCIENTOMETRIJA - IMPERATIV NAUČNE VRIJEDNOSTI SADRŽAJA NAUČNIH PUBLIKACIJA
10.30-11.00	Osman Sinanovic: KOLIKO JE KORONA PANDEMIJA PROUZROKOVALA KRIZU NAUKE OPĆENITO I U BIOMEDICINSKIM NAUČNIM ISTRAŽIVANJIMA
11.00-11.30	Muharem Zildžić: ODNOS IZMEDJU EDUKACIJE I PRAKSE U OBITELJSKOJ MEDICINI: ŠTA SMO TO NAUČILI TOKOM COVID-19 PANDEMIJE?
11.30-12.00	KAFE PAUZA
12.00-12.30	Doncho Donev: PREDATORSTVO I PREDATORI - GOTOVO NERJEŠIV PROBLEM DANAŠNJICE U BIOMEDICINSKIM NAUKAMA
12.30-13.00	Enver Zerem: UTICAJ SCINTOMETRIJE NA AKADEMSKU PROMOCIJU I RANGIRANJE UNIVERZITETA
13.00-13.30	Kenan Arnautović: BIBLIOMETRIJSKI POKAZATELJI CITIRANOSTI U ŠEST NAJZNAČAJNIJIH ČASOPISA U NEUROHIRURGIJI U ZADNJIH DESET GODINA NJIHOVOG PUBLICIRANJA
13.30-14.30	RUČAK
14.30-15.00	Benjamin Djulbegović: DOZVOLJENA I NEDOZVOLJENA NEPOTREBNA PRAKSA U MEDICINSKIM ISTRAŽIVANJIMA
15.00-15.30	Slobodan Janković: PREKOMJERNO KOAUTORSTVO JE GLAVNI RAZLOG I IZVOR NEOBJEKTIVNOSTI U SCIJENTOMETRIJI
15.30-15.45	Sylwia Ufnalska: POTREBNA NAM JE EFIKASNIJA KOMUNIKACIJA U REZULTATIMA ISTRAŽIVANJA: KAKO TO UNAPRIJEDITI U PRAKSI?

IANUBIH
INTERNACIONALNA AKADEMIJA NAUKA I UMJETNOSTI U BOSNI I HERCEGOVINI
INTERNATIONAL ACADEMY OF SCIENCE AND ARTS IN BOSNIA AND HERZEGOVINA

15.45-18.00	Kratak kurs: **DIZAJN OPSERVACIONIH KLINIČKIH STUDIJA** 1. Izbor teme za istraživanje 2. Izbor vrste studije 3. Izračunavanje veličine uzorka i izbor uzorka 4. Izbor studijskih varijabli 5. Etički odbor i regulativa Diskusija, Zaključci, Preporuke. Podjela certifikata polaznicima kursa.

Pakovanje:
film tablete 10 mg x 10
(br. rješenja: 04-07.3-1-3014/20)
film tablete 15 mg x 30
(br. rješenja: 04-07.3-1-3015/20)
film tablete 20 mg x 30
(br. rješenja: 04-07.3-1-3013/20)

Lijek se izdaje uz ljekarski recept.
Bosnalijek d. d., Jukićeva 53, Sarajevo, BiH

ODOBRENE INDIKACIJE: RIVER® 10 mg: Prevencija venske tromboembolije (VTE) u odraslih pacijenata koji se podvrgavaju elektivnom hirurškom zahvatu ugradnje umjetnog kuka ili koljena. RIVER® 15 mg, RIVER® 20 mg: Prevencija moždanog udara i sistemske embolije u odraslih pacijenata s nevalvularnom fibrilacijom atrija, koji imaju jedan ili više faktora rizika poput kongestivnog zatajenja srca, hipertenzije, dobi ≥ 75 godina, šećerne bolesti, pretrpljenog moždanog udara ili tranzitorne ishemijske atake. RIVER® 10 mg, RIVER® 15 mg, RIVER® 20 mg: Liječenje duboke venske tromboze (DVT) i plućne embolije (PE) i prevencija ponavljajuće duboke venske tromboze i plućne embolije u odraslih pacijenata. KONTRAINDIKACIJE: Preosjetljivost na aktivnu supstancu ili neku od pomoćnih supstanci. Aktivno, klinički značajno krvarenje. Lezija ili stanje, ako se smatra da nosi značajan rizik od većeg krvarenja. Istodobno liječenje bilo kojim drugim antikoagulansom osim u specifičnim situacijama kad se mijenja antikoagulacijska terapija ili kad se nefrakcionirani heparin daje u dozama potrebnim za održavanje otvorenog centralnog venskog ili arterijskog katetera. Bolest jetre povezana s koagulopatijom i klinički značajnim rizikom od krvarenja, uključujući pacijente s cirozom jetre, Child-Pugh stadija B i C. Trudnoća i dojenje. **POSEBNA UPOZORENJA I MJERE OPREZA:** Preporučuje se kliničko praćenje u skladu s praksom tokom uzimanja antikoagulansa. Primjena lijeka mora se prekinuti ako se pojavi teško krvarenje. Oprezna primjena u pacijenata s klirensom kreatinina od 15 do 29 ml/mm. U pacijenata s klirensom kreatinina < 15 ml/mm, ne preporučuje se primjena lijeka. Oprez se preporučuje u pacijenata s umjereno oštećenom funkcijom bubrega (klirens kreatinina od 30 do 49 ml/min), koji istodobno primaju druge lijekove koji povećavaju koncentraciju rivaroksabana u plazmi. Ne preporučuje se primjena rivaroksabana u pacijenata s povećanim rizikom od krvarenja. Ne preporučuje kao alternativa nefrakcioniranom heparinu u pacijenata s plućnom embolijom koji su hemodinamički nestabilni ili bi mogli dobiti trombolizu ili plućnu embolektomiju, jer sigurnost i djelotvornost rivaroksabana u tim kliničkim situacijama nisu potvrđene. Rivaroksaban se ne smije primjenjivati za tromboprofilaksu u pacijenata koji su nedavno podvrgnuti transkateterskoj zamjeni aortnog zaliska. Upotreba lijeka se ne preporučuje pacijentima koji u anamnezi imaju trombozu, a dijagnosticiran im je antifosfolipidni sindrom. Ako je potreban invazivni postupak ili hirurški zahvat, lijek se mora prestati uzimati najmanje 24 sata prije zahvata, ako je to moguće i na temelju kliničke procjene ljekara. Sadrži laktozu. Pacijenti s rijetkim nasljednim poremećajem nepodnošenja galaktoze, nedostatkom *„Lapp laktaze"* ili glukoza-galaktoza malapsorpcijom, ne bi trebali primjenjivati ovaj lijek. Sadrži boju alura crveno (E129), koja može prouzrokovati alergijski tip reakcija. **NEŽELJENA DJELOVANJA:** Anemija, omaglica, glavobolja, krvarenje u oku, hipotenzija, hematom, epistaksa, hemoptiza, krvarenje iz desni, krvarenje u gastrointestinalnom traktu, bolovi u gastrointestinalnom traktu i abdomenu, dispepsija, mučnina, konstipacija, proljev, povraćanje, povišene transaminaze, svrbež, osip, ekhimoza, kožno i potkožno krvarenje, bol u ekstremitetima, krvarenje u urogenitalnom sistemu, oštećena funkcija bubrega, vrućica, periferni edem, smanjenje opće snage i energije, postproceduralno krvarenje, kontuzija, sekrecija iz rane. **DOZIRANJE I NAČIN UPOTREBE:** RIVER® 10 mg: *Prevencija venske tromboembolije (VTE) u odraslih pacijenata koji se podvrgavaju elektivnom hirurškom zahvatu ugradnje umjetnog kuka ili koljena:* 10 mg rivaroksabana peroralno, jedanput na dan. Početna doza mora se uzeti 6 do 10 sati nakon hirurškog zahvata, pod uvjetom da je postignuta hemostaza. Preporučeno trajanje liječenja u pacijenata podvrgnutih velikom hirurškom zahvatu na kuku je 5 sedmica, a velikom hirurškom zahvatu na koljenu je 2 sedmice. RIVER® 15 mg, RIVER® 20 mg: *Prevencija moždanog udara i sistemske embolije u odraslih pacijenata s nevalvularnom fibrilacijom atrija, koji imaju jedan ili više faktora rizika poput kongestivnog zatajenja srca, hipertenzije, dobi ≥ 75 godina, šećerne bolesti, pretrpljenog moždanog udara ili tranzitorne ishemijske atake:* Preporučena doza je 20 mg jedanput na dan, što je također i maksimalna preporučena doza. RIVER® 10 mg, RIVER® 15 mg, RIVER® 20 mg: *Liječenje duboke venske tromboze, liječenje plućne embolije i prevencija ponavljajuće duboke venske tromboze i plućne embolije:*

	Period	Raspored doziranja	Ukupna dnevna doza
Liječenje i prevencija ponavljajuće DVT i PE	1. - 21. dan	15 mg dvaput na dan	30 mg
	Od 22. dana nadalje	20 mg jedanput na dan	20 mg
Prevencija ponavljajuće DVT i PE	Nakon završetka najmanje 6 mjeseci liječenja zbog DVT i PE	10 mg jedanput na dan ili 20 mg jedanput na dan	10 mg ili 20 mg

U pacijenata koji uzimaju lijekove za prevenciju moždanog udara i sistemske embolije, mora se prekinuti liječenje antagonistima vitamina K i početi liječenje lijekom RIVER®, kada je INR ≤ 3,0, a u pacijenata koji se liječe zbog duboke venske tromboze, plućne embolije ili uzimaju lijekove za prevenciju ponovnog javljanja, mora se prekinuti liječenje antagonistima vitamina K i početi liječenje lijekom RIVER® kada je INR ≤ 2,5. U pacijenata koji trenutno primaju parenteralni antikoagulans, mora se prekinuti primjena parenteralnog antikoagulansa i početi primjena lijeka RIVER® od 0 do 2 sata prije nego bi bila sljedeća planirana primjena parenteralnog lijeka (npr. niskomolekularni heparini) ili u vrijeme ukidanja kontinuirano primjenjivanog parenteralnog lijeka (npr. intravenski nefrakcionirani heparin).

BH.RIV.2020.03.

Za sve detaljnije informacije o lijeku koristiti posljednji odobreni Sažetak karakteristika lijeka i Uputstvo o lijeku.

BOSNALIJEK
Prvo zdravlje!