New Avenues for Electronic Publishing in the Age of Infinite Collections and Citizen Science
B. Schmidt and M. Dobreva (Eds.)

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Journals' Editorial Policies – An Analysis of the Instructions for Authors of Croatian Open Access Journals

Jadranka STOJANOVSKI[1]
University of Zadar / Rudjer Boskovic Institute

Abstract. The growing number of publications presenting research findings, the pressure on scientists to produce publications in great quantity, and the shift in the business models of many journals increased importance of journals' editorial practices, which are well represented in guidelines for preparing the manuscript for submission. Journals have a special responsibility to protect research integrity and to keep trust in journal publishing. This study looked at information on editorial practices in the instructions for authors of Croatian Open Access journals. 283 instructions for authors from all disciplines were examined according to the broad range of publishing issues grouped in hierarchically organized categories. Mostly addressed issues were manuscript layout (276/283) and journal language (269/283). The most common ethical issues among journals from all disciplines were responsibility of author (73/283), funding (52/283), and accuracy (51/283). There are several ethical issues addressed significantly more often by biomedical journals, like responsibility of authors (14/30), publishing ethics (14/30), conflict of interest (12/30), funding (11/30), and authorship (11/30). In comparison with ethical issues common publishing issues like manuscript layout, manuscript elements, and type of paper were richly represented in journals from all disciplines.

Keywords. Instructions for authors, publishing ethics, Open Access, Croatia

1. Introduction

The value of scientific research and its role in the world prosperity is unquestionable, and publishing is still the main scholarly communication channel. The growth of science, *"publish or perish"* pressure, competition for research funding, more and more profitably scholarly publishing industry, and repeated reports on research misconduct create the need for self-regulation and guidance in the conduct of science and the dissemination of scientific results [1]. One of the first initiatives for *"self-regulation and guidance"* came from a group of journal editors who created the first technical guidelines, known as *"Uniform Requirements for the Submission of Manuscript to Biomedical journal"*. Evolution of *"Uniform Requirements"* inspired other editors, researchers and funders, causing publication ethics to become part of major guidelines and publishing standards. When the UK Committee on Publication Ethics (COPE) was established in 1997 editor of the BMJ Richard Smith stated that COPE *"will serve the editors"* and *"advise on cases brought by editors"* [2] *"Guidelines on good publication practice"* published by COPE in 1999 addressed

[1] Corresponding Author. E-mail: jadranka.stojanovski@irb.hr.

study design and ethical approval, data analysis, authorship, conflicts of interest, peer review, redundant publication, plagiarism, duties of editors, media relations, advertising, and dealing with misconduct [3]. Other guidelines for authors and editors included additional ethical and legal considerations like authorship responsibilities, acknowledgments, duplicate publication, intellectual property, confidentiality, protecting individual rights, and defamation and libel [1].

Ethical issues, often neglected in the small research communities, are actual topics in the area of scholarly publishing. In order to respond properly to potentially low quality submissions, editorial policies of small journals should rely on best practices and guidelines which share the responsibility for research integrity between authors, editors and publishers. Instructions for authors are mirror of editorial policies, summarized in the carefully shaped segments comprising information about journal, manuscript or publishing ethics. Editorial policies reflecting trough the instructions for authors were often neglected in the past. Early study of the instructions for authors proved that beside directions on formatting and style, they often included financial disclosures and policies on coverage, peer review, confidentiality, human experimentation and duplicate submission [4]. Editors of the Croatian journal *Biochemia Medica* stated: *„Whereas our former Instructions to authors have mostly been concerned with recommendations for manuscript preparation and submission, the revised document additionally describes the editorial procedure for all submitted articles and provides exact journal policies towards research integrity, authorship, copyright and conflict of interest.“* [5] Several studies have assessed journals' instructions for authors on the reporting of ethical issues, and the majority of them are from the field of biomedicine or related disciplines [6]–[11]. Croatian journals were included in two recent studies. The first study examined publication ethics policies in biomedical journals published in Central and Eastern Europe. These looked for differences between ethical issues addressed in East (EU) and South East European countries [12]. A second larger study examined 197 instructions for authors in English language of the Croatian OA journals. The results suggested that emerging ethical issues are not well addressed in the instructions for authors, and that biomedical journals performed significantly better compared with all journals [13]. Instructions for authors in Croatian language were not yet analysed. Also, there was no published study comparing Croatian journals among different disciplines according broad range of issues, including journal characteristics and manuscript formatting and style.

The primary aim of this study was to answer the research question: "Were ethical issues in current instructions for authors of Croatian Open Access (OA) journals adequately described compared with information about journal and manuscript formatting and style?" The secondary specific aim was to investigate the differences between instructions to authors of Croatian OA journals from different disciplines. The hypothesis was that biomedical journals, where publication ethics is particularly important, adopted ethical requirements in much greater extent compared with journals from other disciplines.

2. Methods

Based on the Croatian repository of Open Access journals HRCAK[2] journals with available instructions for authors written in English or Croatian language were identified. Out of 363 Croatian OA journals available on HRČAK we identified 298 journals with publicly available instructions for authors. Out of 298 journals, 283 journals from all disciplines had instructions stored in a machine-readable format which enabled the text to be coded automatically.

Then we classified all OA journals according to the discipline, which resulted with distribution of 283 journals as follows: sciences (21), biomedicine (30), technical sciences (29), biotechnical sciences (22), social sciences (87) and humanities (94).

In order to find out the presence of publishing issues in journals' instructions for authors, an analysis was performed. The unit of content analysis in this research was the single document containing instructions for authors. We accessed the 'guidelines for authors' or 'instructions on/for/to authors' at HRCAK website during April 2015, and PDF, DOC and TXT versions were stored locally. The Croatian version of the instructions for authors was included in the absence of an English version. Provalis' Research[3] software QDA Miner and WordStat was used as a tool for content analysis. The categorization scheme used in the previous study [3] was modified and manuscript and journal categories were added. The text was coded automatically according to the hierarchically defined categories, subcategories, words, phrases and rules stored in the categorization dictionary (Table 1). Our categorization dictionary contains 3 top-categories, 24 first level, 30 second level, and 7 third level subcategories including 243 words, phrases and rules used for coding. Table 1 is presenting a simplified version of the categorisation dictionary.

Table 1. Simplified version of the categorization dictionary used for content analysis

Category	Subcategory	Terms used for coding
1. Ethical issues		
	Accuracy	accuracy
	Authorship	authorship, contributorship
	Confidentiality	confidentiality, privacy
	Ethics	ethics
	Funding and CoI	funding, grant, project, sponsor, conflict of interest, competing interest
	Misconduct	allegation, fabrication, falsification, fraud, malpractice, manipulation, misconduct
	Plagiarism	plagiarism
	Redundancy	compilation, dual submission, duplicate submission, multiple submission, recycled, redundant
	Reporting	reporting
	Research integrity	research integrity
	Responsibility	author's responsibility, editor's responsibility, publisher's responsibility
	Retraction	expression of concern, retraction, suspicion, withdrawal

[2] hrcak.srce.hr
[3] provalisresearch.com

Category	Subcategory	Terms used for coding
2. Journal		
	Business model	additional charge, article processing charges, fee, free of charge, open access
	Carrier	analogue (paper), digital (electronic, online)
	Copyright transfer	copyright, creative commons, rights transfer
	Research data	dataset, raw data, underlying data
	Language	Croatian, English, French, German, Italian
	Media	audio, graphics, multimedia, text, video
	Peer review	anonymous, blind, open
	Scope	discipline, field, subject, topic
	Timeliness	estimated time, timely
3. Manuscript		
	Manuscript elements	title, author, abstract, key-words, introduction, materials and methods, results, discussion, conclusion, literature, acknowledgement
	Manuscript layout	layout (spacing, margins, header, footer, paragraph), tables&figures (figure, graph, illustration, image, formula, table), typography (font, italic, bold)
	Type of paper	article, book review, preliminary communication, review article, conference paper

Results were expressed as frequencies and percentages for categorical variables or mean ± standard deviation for continuous variables. Associations between discipline and categorical parameters were tested using $\chi 2$-test. The level of significance was set at 0.05.

3. Results and Discussion

At the top level categories there was no significant difference between disciplines on publishing issues (journal and manuscript). Significant difference was present on ethical issues (Table 2). As expected, ethical issues are best represented in the instructions for authors of biomedical journals (76.7%), followed closely by science journals (76.2%) what was not expected. Less than half of the journals from social sciences have present any of ethical issue in their instructions for authors.

Table 2. Publishing and ethical issues in instructions for authors

Category	Subcategory	Sci	Biomed	Techn	Biotech	Soc	Hum	Chi square value	P(Chi square test)
		N=21	N=30	N=29	N=22	N=87	N=94		
1. Ethical issues		**16**	**23**	**20**	**16**	**43**	**52**	**13.141**	**0.022**
	Accuracy	6	9	9	6	11	10	14.266	0.014
	Authorship	6	11	4	3	7	17	15.654	0.008
	Confidentiality	4	5	3		3	5	13.118	0.022

Category	Subcategory	Sci	Biomed	Techn	Biotech	Soc	Hum	Chi square value	P(Chi square test)
	Ethics	4	14	3	2	11	12	23.751	< 0.001
	Funding & CoI	8	13	4	6	21	7	25.203	< 0.001
	Misconduct	6	8	9	8	6	3	36.301	< 0.001
	Plagiarism	4	4	2	1	5	2	11.143	0.049
	Redundancy	5	9	1	1	5	6	23.924	< 0.001
	Reporting	5	9	1	2	3	2	35.463	< 0.001
	Research integrity	8	14	11	6	15	19	15.6	0.008
	Responsibility	1	5		1	1	1	21.51	0.001
	Retraction	4	4	5	5	2	1	26.085	< 0.001
2. Journal		**21**	**29**	**29**	**22**	**86**	**94**	**4.374**	**0.497**
	Business model	14	13	5	5	23	19	24.018	< 0.001
	Carrier	19	29	26	22	80	87	3.125	0.681
	Copyright transfer	10	13	8	9	22	17	14.256	0.014
	Research data	13	15	10	17	28	18	37.228	< 0.001
	Language	21	27	28	22	82	89	4.152	0.528
	Media	20	25	25	22	74	67	15.788	0.007
	Peer review	2	10	2	2	36	33	22.819	< 0.001
	Scope	19	24	21	21	68	63	11.917	0.036
	Timeliness	10	6	5	4	13	11	16.044	0.007
3. Manuscript		**21**	**30**	**29**	**22**	**87**	**93**	**2.018**	**0.847**
	Manuscript elements	21	30	29	22	87	91	6.097	0.297
	Manuscript layout	21	30	29	22	87	87	14.431	0.013
	Type of paper	21	29	28	22	86	86	8.903	0.113

Manuscript issues (layout, manuscript elements and type of paper) were present in almost all journals (Table 2). According to the frequency of coded categories manuscript layout, including instructions for chapters, paragraphs, margins, page size, line spacing, alignment, indentation, headers and footers, makes large part of the instructions for authors. Significant differences among manuscript layout elements were present for tables and figures which are less prominent in the instructions of journals from social sciences and humanities. According to the frequency of coded categories journal editors are often describing manuscript elements: article title, authors, abstract, key-words, introduction, materials and methods, results, discussion, literature and acknowledgement, tracking IMRAD standard for the structure of scientific journal article. Most frequently mentioned were author(s), abstract and literature list, while the presence of discussion and acknowledgement varied across disciplines. The most popular type of papers in all disciplines are article (scientific paper) and conference paper.

Regarding journal information the most addressed media was text presented by PDF format, as expected. Information about journal carrier were equally represented by terms "print" and "electronic", and suggested languages were mostly English and Croatian. An interesting observation was that CD as the carrier for journal or manuscript is still very popular, and mentioned by 38% of all journals. Business models, including fees and charges, are mostly present in journals from science and biomedicine disciplines. The terms "article processing charges" or APC were not mentioned, although a few journals are charging for publishing papers. Open Access was addressed only by 14 journals, even all 283 journals included in the analysis were OA journals. Open Access is a huge privilege for authors and should be mentioned in the instructions for authors. In the instructions for authors, editors are not communicating copyright issues, peer review type and timeliness, all issues of crucial importance for potential authors.

4. Conclusion

An analysis of the author instruction of Croatian OA journals show that ethical issues was the least prominent category in our study. The most frequent ethical issues addressed by Croatian OA journals were responsibility, funding and accuracy. Guidance regarding redundancy, conflict of interest, reporting, retraction, confidentiality, plagiarism, and research integrity was addressed by less then 10% of the journals. There are several issues addressed more often by medical journals, compared with journals from other disciplines, like responsibility, publishing ethics, conflict of interest, funding, and authorship. Ethical issues like retraction, plagiarism, research integrity and confidentiality were represented by few biomedical journals.

It is important to keep in mind that the data presented in the study are the policies of the journals as stated in the instruction for authors. A lack of presence does not mean that particular item is not important for editor. It means that instructions for authors should be revised and improved.

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