

Open Access editorial policies of SciELO health sciences journals

Abstract

SciELO promotes open access and cooperative publication of scholarly journals, based mainly in Latin America, the Caribbean, Spain and Portugal. SciELO was created to offer solutions to increase the visibility of participating journals and facilitate free access to their full texts. This work aims to analyse the open access editorial policies implemented by the health sciences journals of the SciELO network (411 journals at the time of this study) in terms of authors' rights, copyright issues, self-archiving policies, and openness. From SciELO health sciences journals network, 92% of the 411 journals, use a Creative Commons licence; 89% require transfer of author copyright, and 14% apply APCs. According to the past SHERPA/RoMEO taxonomy of self-archiving policies, 8.5% of the journals were classified as white, 81.5% blue and 10% green. The openness of journals calculated through the Open Access Spectrum approach was higher than 60% in more than 80% of the total journals. Out of the 411 journals in SciELO portals, 380 have their own website. There were found discrepancies between licences stated in SciELO compared to the ones used in their websites, mainly due to the lack of declared licenses in either of the two sources or because the licences did not match. The licenses used on the websites and in SciELO were compared with their corresponding records in DOAJ and Crossref, and again the differences were narrowly related to the data supplier.

1. Introduction

The main vehicle for the dissemination of scientific knowledge is the peer-reviewed scholarly journal, whose content is evaluated by members of the scientific community in order to guarantee the quality of published research. In the last 20 years, the publication and distribution of journals has undergone a major transformation due to the development of new information and communication technologies. The transition to the digital world should have meant a reduction in production and distribution costs, however, in recent decades subscription prices have been increasing faster than the GDP Price Index [1]. Large publishers have

reinforced their access barriers and prevented the reuse and distribution of their content with restrictive copyright agreements. All these circumstances, together with the emergence of groups of researchers concerned about the visibility and impact of their research, created an atmosphere that contributed to the so called Open Access Movement, which promotes “free access to scientific production” [2], giving rise to some substantial changes in the communication and dissemination patterns of scholarly research. In brief, open access means immediate free access to scholarly output and non-restrictive conditions for their reuse, in this regard, the copyright holder determines the terms of distribution licences and how open they will be. This has been met largely with the adoption of open licences that allow remixing and reuse under the terms established by the copyright holder. Creative Commons licences [3] are the most commonly used in academic and scientific publications, while GNU licences are the most widespread among developers of open source software.

Globally, the number of scientific journals that have adopted OA publishing models has not stopped growing since 2004, with an increase of approximately 1% per year [4], and LAC countries have contributed considerably to this expansion and consolidation. In contrast with the United States and Europe, scholarly journals in LAC countries are mostly published by public academic institutions, research centres, hospitals, learned societies and professional associations, which have personnel trained in publishing and scientific communication and are funded by public resources [6]. In addition, the development of a series of open source software and protocols has allowed journals to improve their standards for managing, publishing and distributing their papers and to gain visibility. This, together with the non-commercial nature of their publication, has laid strong foundations for the consolidation of a strong and widespread OA movement in Latin America [7]. Chinchilla-Rodríguez et al. [5] estimated that 74% of the journals in the Region included in Scopus were open access. A study carried out in 2016 showed that the trend among LAC journals was to make the full texts of their articles freely available, but without a clear author rights policy consistent with the definition of the Budapest

Declaration [8]. It is therefore important to foster explicit journal editorial policies in licensing, copyright terms, ownership, and reuse permissions for readers and authors.

From the beginning of the Open Access (OA) movement and even before the announcement of the Budapest Declaration, Latin American and Caribbean (LAC) countries had been implementing projects and initiatives to promote open access to scholarly outputs. Among those initiatives, SciELO (Scientific Electronic Library Online) is probably the most known and recognised internationally. SciELO was created in Brazil in 1998 out of a collaboration between the Latin American and Caribbean Centre for Health Sciences Information (BIREME) of the Pan American Health Organization (PAHO), and the Foundation of Research Protection of the State of São Paulo (FAPESP). It is an initiative created to promote the free and cooperative electronic publication of scientific journals, based mainly in LAC countries, Spain and Portugal [9]. SciELO was conceived to offer solutions to increase the visibility of journals and facilitate free access to their full texts, based on the idea that knowledge is a public good.

Originally, the SciELO portal contained only Brazilian journals. However, in 1999 Chile adopted the model and created its own national SciELO collection. Since then, SciELO has expanded its coverage so that today it includes 14 countries and has moved beyond the LAC region to include Spain, Portugal and South Africa. Altogether, SciELO indexes more than 1,600 journals from different disciplines, with more than 800,000 articles. The consolidation of the SciELO network, more than 20 years after its creation, has made it one of the projects that has advocated and encouraged open access projects and initiatives in LAC countries, and it has undoubtedly given a great boost to this movement.

Health sciences were the first disciplines to begin adopting the SciELO model, and have played an important role within the SciELO network. SciELO health journals use a model of open scientific communication, freely available immediately after publication, mostly published by non-commercial publishers that allow the reuse and distribution of the published

papers under open licences. However, there is not a uniform editorial policy among Scielo journals regarding sharing and reuse their contents. Therefore, our work was focused on ascertaining in SciELO health sciences journals the terms related to their openness, and determine, if any, their differences and potential relationships connected with their origin.

An exploratory work made by the authors revealed that the definition of the terms of reuse, licensing, and copyright holder differed depending on the sources consulted, i.e., the journals' portals or SciELO's portals. These differences provided us with a framework for clarifying in the collection of health sciences journals what these incidences could be.

Disagreement between information sources could affect the selection criteria where to publish according institutional or funding open access requirements. Therefore, the questions that respond conceptually to this study are:

- What is the value of the variables that define the openness of a journal (taking the OA spectrum as a reference)?
- Do these variables acquire the same value depending on the source consulted?
- If the values do not agree, how do they do quantitatively? Are differences significant?

To answer those questions and accomplish our objectives, it is necessary to locate and to analyse the open access editorial policies implemented by health sciences journals in the SciELO network. The analysis was focused on discerning to the following themes:

- (1) Main characteristics of the scholarly journals within the SciELO Health sciences collections (type of publisher, science editor, subjects, language)
- (2) Use of licences, if so, type of licence
- (3) Who is the copyright holder
- (4) Editorial policies on self-archiving
- (5) Publication fees (APCs)

Bearing in mind the above, the general objective of this work is to provide profiles of health sciences journals of the SciELO network and to determine likely inconsistencies regarding copyright issues and type of licences, depending on the sources consulted.

2. Methodology

General characteristics of journals (country, language, type of publisher, access) and the corresponding information about the copyright holder, self-archiving permissions and versions for depositing were obtained by searching manually journals websites and national SciELO portals. This information was found mainly on the home page, in the instructions to authors, or through specific links to copyright and open access policies.

The journals' permissions for self-archiving were classified according to the previous taxonomy used in by SHERPA/RoMEO directory [10] using a colour coding system: white (self-archiving is not allowed); yellow (pre-print version is permitted); blue (accepted or published version is permitted); green (author's pre-print and post-print versions are allowed).

Creative Commons licenses adopted by journals were retrieved from four different sources: journals websites, national SciELO portals, the DOAJ directory (<https://doaj.org/>), and Crossref (<https://www.crossref.org/>).

We used Unpaywall database (<https://unpaywall.org/>) to obtain licensing metadata as supplied by Crossref. The simple Unpaywall query tool was used to check the open access status of articles by submitting a list of DOIs from journals using DOI as unique identifier. This process was done for year 2020 and repeated for previous 5 years to see if licences had changed. Taking into account that Crossref encourages provision of licensing information, but it is no mandatory.

Microsoft Excel was used for the descriptive analysis and graphic representation of the results. Pearson's contingency tables and Chi-square tests ($p < 0.05$) and Wilcoxon signed rank

test were performed by the Statistical Package for the Social Sciences for Windows, version 25.0 (IBM Corp., Armonk, NY).

The Wilcoxon signed rank test is a non-parametric test used for categorical variables to compare related samples. In our case, we compared CC licenses stated on journal websites with those in SciELO portals, and then each of these with those supplied from Crossref and from journals indexed in DOAJ. The CC licenses were sorted in increasing order according to their reuse permissions. Following values were assigned: 0 = BLANK (no license stated, or all rights reserved). 1 = CC BY-NC-ND; 2 = BY-NC-SA; 3 = BY-NC; 4 = CC BY-ND; 5 = CC BY-SA; 6 = CC BY. The test allowed to determine whether or not existed differences (negative ranks, positive ranks or ties/matched pairs) between pairs of two dependent samples.

2.1. The OA spectrum of SciELO health journals

The criteria of the Open Access Spectrum categories [11] have been applied to the SciELO health journals to assess their degree of openness taking into account only the first four variables of the spectrum with 5 levels ordered by degree of openness, and with discrete values as follows:

- Reader rights are related to the time when the journal's content can be freely accessed. The score ranges from 0 to 20 (0, 5, 12, 16, 20), with journals that are freely accessible immediately upon publication receiving the maximum score.
- Reuse rights measure the extent to which articles can be reused and remixed according to their licences. The score of this variable also ranges from 0 to 20 (0, 4, 7, 14, 20), with the highest value corresponding to journals that use the CC BY licence.
- The copyright variable refers to the copyright holder and ranges from 0 to 16 ((0, 4, 10, 16) and the maximum score is for journals that leave all rights without restrictions with the author.

- Author posting rights: this variable refers to authors' permissions to deposit or host their work on different platforms such as institutional repositories, personal pages or social academic networks. The maximum score is 16 (0, 4, 6, 10, 16) for journals that allow self-archiving of any version on any repository without delay.

3. Results and discussion

3.1. General profile of the journals: country, editor, publisher, language and use of APCs

3.1.1 Country of origin

A total of 411 journals from 14 SciELO national collections were classified into the following areas: 357 in Health sciences (including medicine, nursing and physiotherapy, dentistry and pharmacy) and 54 in Psychology. The country that made the largest contribution to the sample was Brazil, with 110 journals representing 27% of the total health sciences titles (Table 1). Out of the total journals, six (four Brazilian and two Chilean journals) have been part of the SciELO network for more than 20 years and were pioneers in the implementation of open access editorial policies.

[Insert Table 1. Number of total SciELO journals and health sciences journals by national collections].

3.1.2 Science editor

Most of the journals (96%) are edited by professors or researchers who belong to scientific or learned societies, universities or research centres (Table 2), which is a clear sign of the commitment to open access in LAC countries. The journals from Cuba, Colombia and Peru are mostly edited and published by universities, while the South African, Chilean and Argentinean journals are mainly owned and published by learned societies. There is no presence of

commercial publishers in 8 of the 15 national collections studied, which agreed with data provided by a previous research [12].

3.1.3 Publisher

We distinguished three types of publishers: universities/research centres/hospitals, learned societies/scientific associations/charity foundations, and commercial publishers (Table 2). It should be noted that 88 titles (21.4%), mainly from learned societies, use commercial companies for the publication and distribution of their own publications, while university journals (45%) are produced by their centralised publishing houses.

3.1.4 Language

Regarding publication language(s), it is interesting to note that apart from South Africa, Brazil is the country that has made the biggest effort at internationalisation, with more than 70% of its journals published in English or in a bilingual English/Portuguese format (Table 2). Among the other national collections, Spanish is the predominant language, with percentages exceeding 75% in Argentina, Colombia, and Mexico. The internationalisation of Latin American journals in terms of the language of publication remains similar as in 2012 [13]. Languages of LAC documents indexed by SciELO Citation Index, within the period 2005–2017 revealed also that Spanish language dominated, accounting for about 40% of the documents, followed by Portuguese (33%) and English (27%). The dominance of Spanish contrasts since SciELO originated in Brazil, and Brazil is the country with the highest number of journals in its database [14].

[Insert Table 2. Descriptive characteristics of the SciELO health sciences journals collection].

3.1.5 Cost of Author Processing Charges (APCs)

Applying publication fees is a rare practice in Latin America and our results confirmed what has already found in previous studies [15-17]. Only 56 journals (13%) charge APCs and of these only seven have also submission fees, and three charge page fees. The publication fees range from 30 to 1,600 US dollars, and 60% of the journals that charge publication fees publish exclusively in English or in a bilingual English-Portuguese format. This range exceeds the average and maximum fees found in Brazilian journals, \$265 and ~\$951, respectively [16]. According to the chi-square test, no association was detected between the type of publisher and the application of APCs ($p > 0.05$), although this result could surprise, it could be due statistically to the disproportion of number of journals within this category.

3.2. SciELO health journals and the use of Creative Commons licences

According to the data offered by SciELO, 92% of the journals adopted a CC licence: BY: 163 (39.7%); BY-SA: 2 (0.5%); BY-ND: 3 (0.7%); BY-NC: 112 (27.3%); BY-NC-SA: 30 (7.3%); BY-NC-ND: 68 (16.5%). And 33 (8%) stated all rights reserved:

All the journals in six out of the 15 national collections (Brazil, Portugal, Cuba, Costa Rica, Bolivia, and South Africa) used CC licences. Conversely, 100% of the journals published in Venezuela adopted an “all rights reserved” policy.

Creative Commons BY was the most widely used licence (Figure 1), in agreement with the recommendation made by SciELO Brazil in 2015 to promote the use of this type of licence [18]. However, 8% of the journals in the SciELO health collection still maintaining “all rights reserved” policy, in clear opposition to the principles of sharing and reuse of all material.

[Insert Figure 1. Use of Creative Commons licences by national collection of SciELO health sciences journals].

The use of CC licences has grown compared with previous studies [8, 19] in which CC BY-NC and CC BY-NC-ND were predominant. This trend towards the main use of CC BY licences agrees with the findings in a study with Ecuadorian journals [19]. However, there is no consensus on the use of a unique licence, and the fact that the CC BY licence allows the commercial use of open access scholarly output has generated some controversy about its suitability, on the basis that public open research should not be used for third-party profit. In this regard, some Latin American platforms, such as Redalyc and Latindex, signed the Declaration of Mexico [20] recommending the use of the CC BY-NC-SA licence, which does not permit the use of material for commercial purposes. The SciELO network adopted the use of a CC BY licence by default as of July 2015 [18] and urged national collections to encourage its use, because it is the licence that best aligns with open access principles and it is potentially the most effective in maximising the distribution and reuse of journal content. This result contrasts with previous data published in 2016 [8], in which the preferred licence among SCiELO journals was CC BY-NC. The current use CC BY could also respond to some funders open access requirements regarding scholarly publications.

A comparison of licence types against copyright holders (Figure 2) revealed that the use of CC BY licences was higher among journals whose rights are held by scientific societies, academic or research institutions. However, there was any significant association between the copyright holder and the use of one or another CC license ($p= 0.622$).

[Insert Figure 2. Copyright holder by type of CC licence used by journals].

Comparison of use of licences against the type of publisher (Figure 3) showed that CC BY and CC BY-NC are the most widely used among academic and scientific publishers, while among commercial publishers the preference is for CC BY-NC-ND to avoid

commercial use of the papers. According to the chi-square test, a statistically significant association ($p < 0.05$) was detected between the type of publisher and the licence used. The corrected residuals showed that the association between the use of CC BY-NC by learned societies, CC BY-NC-ND by commercial publishers and CC BY by university publishers contributed to this significance.

[Insert Figure 3. CC licence used by type of publisher].

If we cross-check the data on the country of publication against the use of CC licences on the journals' own websites (Figure 4), there are three countries that some of their journals indicated "all rights reserved": Brazil (22.7%), Chile (65%) and Bolivia (100%); however, according to the SciELO portal all of those use CC licences. This revealed some discrepancies between licences depending on the searched source.

[Insert Figure 4. Licences indicated by SciELO health sciences journals on their own websites].

The licensing information found on the websites of the journals differed for the data on SciELO portals. Out of the 380 journals with their own website, 72.6% used some type of CC licence, the CC BY being the most widely used, followed by BY-NC-ND, however, only 58% (222 titles) coincided with the same type of licence. The rest (27.4%) publish under the formula "all rights reserved", which restricts the use of their content, however in SciELO only 8% of journals adopted this restricted policy. These discrepancies between the information provided by the journal websites and that offered by the SciELO portals, DOAJ or Crossref metadata, will be discussed in next section.

3.3. Discrepancies among CC licenses stated on the journals websites, SciELO, DOAJ and Crossref

We observed licensing information disagreed when we compared information provided by journal websites, SciELO portals and also from DOAJ and Crossref (searched through metadata in DOIs records). The comparison of licenses with those registered in Crossref was made with data from 2020. Before that, it was searched if there have been any change in the type of license between the years 2015-2020. Of the 259 journals that used DOI in 2020, 151 continued to adopt the same license, 29 have evolved to a more open CC licenses and 30 changed to some less open CC licenses.

Discrepancies between licensing information depended on the supplying source and were determined by Wilcoxon rank test (Table 3), taking into account the assigned values for licenses described in methodology.

[Insert Table 3. Matched pairs and discrepancies in terms of positive and negative ranks due to different licensing information in searched sources].

Inconsistencies between CC licenses applied on journal websites and on SciELO portals were around 41% (Figure 5).

[Insert Figure 5. Creative licences used by journals depending on the supplying source: journal websites and SciELO portals].

The ratio of matched pairs of licenses in DOAJ with journal websites and SciELO portals was similar and approximately 80%. However, the ratio of matched pairs of licenses of journals registered in Crossref with the ones in the journal websites and SciELO portals was lower and approximately 62% (Figure 6).

[Insert Figure 6. Matched pairs and discrepancies in licensing information between different supplying sources: journal websites, SciELO, DOAJ and Crossref].

It was observed that licenses stated in journal websites compared with those in SciELO were mainly due to the lack of license (blanks) either on their websites or in SciELO portals. The rest of positive and negative ranks were due to the different license used in both sources. Negative ranks were mostly caused by journals that did not declare any license on their websites (blanks) and represented 23% of the sample. These cases coincided with the journals that in SciELO adopted CC BY or CC BY-NC licenses (Figure 6).

The same analysis has been done to compare licences stated in journal websites and SciELO portals with licenses registered in DOAJ and supplied by the Crossref API. It was verified that some journals included in DOAJ pointed to URLs of SciELO and others to its journal domain. Number of matched pairs of journal websites with DOAJ (Figure 7) were similar except for the blanks and the journals with CC BY-NC. This agreed with the fact that when comparing licenses in SciELO with those declared in DOAJ (Figure 8) is observed a decrease in the cases of blanks and an increase in journals with CC BY-NC and CC BY, this lead to think that the data provider for inclusion in DOAJ in those cases has been SciELO.

[Insert Figure 7 Matched pairs of licences stated in journal websites and DOAJ].

[Insert Figure 8. Matched pairs of licences stated in SciELO portals and DOAJ].

The same behaviour was observed when we analysed data of journal websites and SciELO portals against metadata from Crossref (Figures 9 and 10).

[Insert Figure 9. Matched pairs of licences stated in journal websites and Crossref].

[Insert Figure 10. Matched pairs of licences stated in SciELO portals and Crossref].

3.4. SciELO health journals and copyright holder

Regarding who owns copyright (Table 4), 95% of the journals make some mention of the copyright terms or publication agreements.

Information about authors' rights and copyright holders are very similar on the journal websites and the SciELO portal when the owner is a commercial publisher or a scientific society. Discrepancies occur when ownership is attributed to academic institutions or to authors because wording of copyright statements sometimes is ambiguous or unconcise, and it is difficult to ascertain who is the copyright holder or if the transfer is a non-exclusive or exclusive copyright transfer (Table 4).

[Insert Table 4. Comparison of the copyright holder according SciELO portal and journals own websites (September 2020)].

There is no specific section on the journal websites to inform about copyright; generally, it is indicated on the home page, or in the "about" or "submission" sections.

We have found journals with ambiguous and unclear specifications of copyright terms as well as journals that only offer a link to the licence and reuse conditions, with no explicit mention of the copyright holder, this lack of standardised language has been also revealed in European journals indexed in DOAJ [21].

According to SciELO portals information, the authors grant copyright to the publisher for 89% of the titles. Therefore, the predominant editorial policy is based on the transfer of author copyright. These results agreed with the findings of similar studies [5, 7, 19, 22-24].

A diverse range of expressions is used to specify whether or not the authors transfer copyright. In the case of journals that reserve all rights, they generally express it in terms such as:

“The authors assign the copyright to the [Society, University, Research Institute...] and [the text] may not be reproduced in any medium, in whole or in part, without the corresponding authorization”;

“By submitting their manuscript the authors agree that the copyright for their article is transferred to the Publisher. Any reproduction, whether partial or in full, is prohibited with any other party or through any other channel of publication, whether it be printed or in electronic format, without the required prior authorization”;

"All manuscripts published will be permanently owned [...] and cannot be reused without written consent."

In other cases, the authors assign rights with a licence that allows their reuse under certain conditions. In these cases, the journals generally use a Creative Commons licence, which in general terms establishes that:

“Articles published in [...] are distributed under a Creative Commons Attribution CC- [...] licence.

“Submission of work and acceptance to publish means authors transfer publication rights to [...]”;

“Em caso de aprovação e publicação do trabalho no periódico, os direitos autorais a ele referentes se tornarão propriedade da revista, que adota a Licença Creative Commons CC- [...]”

When authors retain all rights (11%), some of the copyright statements used are as follows:

"The authors retain the copyright and give the journal the right of first publication and the work will be distributed under a Creative Commons Licence, which allows third parties to use it with acknowledgement of authorship and mentioning the original source";

"Authors retain copyright and can allow anyone to reuse the work under a CC ... licence."

There was a significant positive association ($p < 0.05$) between the copyright holder and the type of publisher. Copyright is mostly granted to the publisher, except for journals published by a commercial publisher, where the rights are assigned to learned societies or institutions which own the journal and with whom some commercial publishers have some kind of contract/agreement.

3.5. Self-archiving permissions

Very few journals offer specific information about what, where and when articles can be reused and posted in an open venue. Self-archiving permissions have been associated with the conditions of reuse, so that all journals published under a CC licence would allow depositing the VOR version, always with the reference to the original source and respecting the terms of the licence.

According to the past colour-coded taxonomy of SHERPA/RoMEO regarding self-archiving terms [16], 8.5% are white journals, 81.5% are blue, and 10% are green, based on the versions allowed for self-archiving, with a preference for the VOR in the cases of blue and green journals. Some journals allow to deposit pre-print versions (37 and 73 titles according to SciELO and their websites, respectively). These data are similar to those obtained from the analysis of Spanish scientific journals published mostly by scholarly institutions [25].

In the three groups of publishers identified, journals that allow self-archiving in repositories are, as already mentioned, mainly blue, allowing the VOR to be deposited.

3.6. Presence of SciELO journals in DOAJ and SHERPA/RoMEO

The DOAJ database gathers more than 14,000 journals from 130 countries. Around 3,200 are based in the LAC region, Spain or Portugal, which represents 25% of all DOAJ journals. In the case of the SciELO health sciences collection, 57% (n = 236) are indexed in DOAJ. The Brazilian collection is the one that contributes the most titles to this directory, representing 46% of the total and 21% (n = 87) have their editorial copyright policies registered in the SHERPA/RoMEO directory.

There are 16 titles listed in DOAJ (all of them from the Brazilian collection) that indicate an “all rights reserved” policy on their websites, while in DOAJ they are registered with a CC license. This might be explained by the fact that SciELO Brazil provides also metadata to DOAJ, so that if in SciELO the information is not accurate, it will be inaccurate in DOAJ as well. It may also be that journals websites have not updated their licenses according to SciELO recommendations.

3.7. OA spectrum of SciELO health journals

Details on how to calculate the OA spectrum are described in the methodology section. The percentage calculation of the degree of openness resulted in the distribution is shown in Figure 11. There were differences between the results obtained from information supplied by SciELO portals and the information found on journal websites. These discrepancies respond mainly to the different values for the reuse and posting rights variables due discrepancies in licensing information, discussed previously. According to SciELO data, 84% of the journals gave an OA percentage higher than 60% with a median of 86%, while according to the data from their websites 71% have an OA percentage greater than 60% with a median of 71%.

[Insert Figure 11. Open Access percentage based on the calculation of the OA spectrum, according to data from journal websites (n = 380) and SciELO health sciences (n = 411)].

The titles that obtained the highest scores for openness, taking into account both sources, were *Universitas Medica SA*, *Journal of Industrial Psychology*, *Journal of Inborn Errors of Metabolism and Screening*, and *Medical Humanities*.

There are very few studies calculating the degree of openness based on this spectrum. In the first, conducted on 1005 journals indexed in Scopus belonging to different disciplines and using all six spectrum variables, no journal obtained a 100% score [26]. In the case of Spanish scholarly journals, a study using the same approach as in this study, applying only the first four variables of the spectrum, found that, in contrast with SciELO, health sciences journals obtained the lowest openness scores [27]. This was because many Spanish biomedical journals are published by commercial publishers, and their content is accessed mainly by subscription, which significantly affects the reader rights component.

3.6. Limitations of the study

The study is based on data obtained from different sources; however, those data may change due to periodic updates. Besides that, there some limitations due to:

- Not all analysed journals are indexed in DOAJ and Sherpa/RoMEO, therefore comparison between different sources is asymmetric
- Not all journals have their own site, so comparison with SciEO portals is not feasible in the whole sample
- Our dataset only includes SciELO journals in health sciences and it is possible that journals out of this category could have different characteristics from journals in this

study. Therefore, there is limited ability to generalize findings to journals that are not in this work.

- Journals from geographical areas like Venezuela or Cuba do not use DOIs to identify their papers, so this prevents data recovery from Crossref for comparison purposes.
- Crossref encourages provision of licensing information, but it is no mandatory, that means that suppliers could miss licencing metadata even if the journal uses any licence.

4. Conclusions

SciELO health sciences journals use an open access model of science communication, published mostly by academic or scholarly institutions, and distributed under open licences that allow sharing and reuse of their papers.

Editorial policies regarding access, reader rights, reuse rights, and author posting rights are above the mean for most journals according to the open access spectrum.

There is a discrepancy between licensing information retrieved from the SciELO portals and the data from the journals' official websites, with a 20% deviation between both sources. We recommend editors/publishers to ensure consistency in the information on editorial policies published on their websites and those provided by the SciELO network, because discrepancies in such information will cause uncertainty about the permissions for reuse of their papers, and question the accuracy of data present in OA related directories. These discrepancies may be important in cases where authors receive funding from funders that require a type of licence and a rights retention plan, as the supporters of Plan S. Principles of Plan S [28] state that authors must retain copyright and articles must be distributed with the CC BY license for the VOR or accepted version (AMM). The tool checker created [29] to check if journals comply with Plan S could give false positive results depending on the metadata feed if these inconsistencies persist.

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