

The scientific publication becomes more extensive than the article - BrJP data repository

A publicação científica torna-se maior que o artigo - repositório de dados da BrJP

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Some paths don't allow you to turn around and go back, and they must be followed. These paths often have an impact due to their changes in processes. They also create resistance movements, but the results represent benefits and advantages that make them undeniable so that adaptation will be needed. Among these movements are Open Science (OS) and Artificial Intelligence (AI) platforms. In contrast to machines, we *Homo sapiens* foster creativity and knowledge, using questions and philosophical or conceptual reflections, with social interaction to develop from affinities and divergences. It has been proven that OS accelerates the process of scientific dissemination during the COVID-19 pandemic, and AI tools are developing with similar goals for access to information.

OS refers to policies and actions aimed at disseminating knowledge, mainly in digital format. To promote innovation and the advancement of knowledge, OS policies encourage and enable ways of making research results more accessible, reusable, and reproducible¹. With greater dissemination of publications, data, methodologies, audiovisual materials, and computational processes used and developed in the course of research, it is estimated that collaboration between scientists and the reuse of results will be directly facilitated.

OS aims to foster the advancement of knowledge through collaborations facilitated by making information available in public digital repositories containing three essential elements: Open Access (publications), Open Data (including raw data, models, specifications, and documentation), and Open Computational Processes (such as software and algorithms). OS provides a new way of carrying out research, with a strong emphasis on the dissemination of knowledge, collaboration between scientists, the reuse of results, and, consequently, the acceleration of scientific, technological, economic, social, and cultural progress.

The interaction between researchers fostered by OS's actions is directly associated with the worldwide experience in combating the COVID-19 pandemic. The sharing of data, publications in preprint repositories, with open discussions in peer review, published databases, and other procedural information have made it possible to accelerate understanding of the disease's pathophysiology and the SARS-COV2 virus, treatment and prevention approaches, and the development of several vaccines around the globe.

Playfully, OS is described by some as a strategy that "saves lives". Others jokingly suggest that to save lives, you need "heroes". So the reflection continues, and a question remains open: what are these "superpowers" of the "heroes" who "save lives" through OS? The answer lies in the essence of OS's actions and policies: speeding up and disseminating scientific knowledge and promoting greater collaboration and discussion of research results. Understanding the virus and the design of various vaccines are attributed to the data and information published in open access, including by traditionally paywalled journals and publications in preprint repositories and data repositories.

The added value of the unknown "power" of AI tools' generates insecurity in some and creates high expectations in others. However, it is essential that published data and information are interoperable so that "the machine" can access and read it. Database architecture should be planned collaboration between researchers, librarians, and information technology (IT) professionals. In practical terms, organizing, publishing, and preserving data places extra demands on the researcher. However, the information made available in data repositories adds value to research. Sharing information that endorses the production of knowledge, raw data, notes in laboratory notebooks, and images and videos produced during the study has added value, demonstrating the competence of the researchers and the institutions where the scientific research was carried out. In addition to fostering partnerships, preserving this data is a science responsibility.

Research is bigger than the brief description reported in a scientific article, and readers trust the integrity of authors when they read the detailed description of the method, but the possibility of sharing the data and other documents related to the scientific study adds reliability value to the authors, as well as allowing access to extra procedural details, beyond what was reported in the scientific article.

Researchers and authors of articles published in BrJP rely on the technical support of librarians and IT staff to publish their articles in our data repository hosted by Scielo Data2. Like publishing a scientific article, scientific data follows the FAIR³ principles, which advocate data findability, accessibility, interoperability, and reusability. Sharing data in reliable repositories,



such as the service provided by Scielo Data, also follows the TRUST⁴ principles: transparency, responsibility, user focus, sustainability, and technology.

Meeting the demands of this giant “umbrella”, OS⁵ presents itself as a “way of no return”, much due to the worldwide experience that led to scientific advances during the pandemic years. However, some health data is sensitive, and ethical issues require protection or restricted access to protect vulnerable populations, especially when it comes to studies with indigenous peoples. It is, therefore, essential to reflect on this before publishing the data to ensure that the CARE⁶ principles are respected: collective benefit, authority to control, responsibility, and ethics.



To prepare the data for sharing, researchers and authors should access the Scielo Data⁷ page. Registration can be done via ORCID (Google or GitHub account). After registering, researchers and authors can go to the BrJP¹ repository to include their collected experimental data, fill in the metadata, and inform the type of data license. Some data may be published with restricted access for ethical reasons (CARE principles) and patent reasons. Once submitted, the information is analyzed and consulted by Scielo Data for presentation guidelines to guarantee interoperability with the machine so that the data can be found in search engines.



The researchers collect and analyze the data and the results of their research, and the librarians participate in the information architecture. Finally, the IT team carries out the data architecture. This planning allows for information management to feed data storage resources and IAs. To create a unified vision, the Brazilian Institute of Information on Science and Technology (*Instituto Brasileiro de Informação em Ciência e Tecnologia* - IBICT) brings together general results (OasisBr/IBICT)⁸ and a scientific research ecosystem (BrCris/Ibict)⁹ to offer a plural vision of what a research result is, which is not limited to the

scientific article. OS is accessible, and knowledge and information are broader than just the publication of a scientific article.

Sincerely,

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