Editorial

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Open science in physical activity and health: a call for transparency, collaboration, and sharing

Ciência aberta na atividade física e saúde: uma chamada para transparência, colaboração e compartilhamento

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Open science has been increasingly disseminated and discussed across different knowledge fields. Although the movement is worthy of celebration, it is necessary to reflect on the perspectives and challenges of implementing open science in studies involving physical activity and health. The United Nations Educational, Scientific, and Cultural Organization (UNESCO) defines open science as an inclusive concept that combines movements and practices to promote: (1) open, multilingual, and reusable scientific knowledge; (2) scientific collaborations with information sharing for the benefit of science and society; and (3) opening scientific processes to different societal segments, beyond the traditional scientific community[1]. The value of these initiatives is evident, with international research funding bodies adapting their policies to prioritize open and transparent practices in their guidelines for projects' assessment and conduct[2–4]. In Brazil, it is noticeable a growing popularity of publications in open-access journals (i.e., without monetary fees to read the articles) as a step towards open science. However, the culture of open science also encompasses the promotion of diversity, transparency, collaboration, and public involvement. This editorial seeks to foster the physical activity research community to embrace the responsibility of pursuing science with processes and deliverables that are more meaningful to the public.

The principles of open science are generally well accepted, as they embody societal values that emphasize science as a collective effort that derives a public good[5]. In other words, people expect science and knowledge to make the world a better place. However, accepting these principles and subscribing to open science is merely the initial stage of a continuous movement. The next stage requires the engagement of individuals and institutions, leading to the training and adoption of open research practices[6]. To bridge the gap between discourse and action, open science demands the deconstruction of entrenched practices and a willingness to challenge the academic system, which often places unequal emphasis on processes (e.g. research and publishing practices) versus products (e.g. articles). Although progress has been made in some methodological aspects, academic assessment remains predominantly focused on research "products," primarily based on the journal in which each study is published. This model benefits certain individuals, careers, and institutions, however, when considered as the sole indicator, does not prioritize scientific advancement. Therefore, it is essential to revisit individual, institutional, and governmental responsibilities to foster a socially referenced science.

Although institutions tend to adopt open science policies at a slow pace, we can anticipate this movement in our studies on physical activity and health. Research in physical activity offers a fertile ground for intensifying the active participation of diverse audiences in scientific research, fostering collaboration with individuals outside academia. For instance, in projects involving the school community, the design and/or interpretation of results can be enriched through meaningful dialogue with students, parents/responsibles, educators, and the broader school community. Within the context of Brazil's Unified Health System (*Sistema Único de Saúde* - SUS), a more collaborative research approach might involve healthcare workers, users, and managers at various stages of the research process, contributing to the discussion of priorities and objectives, key outcomes, and the interpretation/dissemination of results. Open science also enhances scientific education and elevates the perceived value of research, making it more accessible and understandable to those outside the project.

The current scenario in Brazil provides an opportunity for researchers in physical activity and health to consolidate academic cooperation networks, thereby strengthening our field within the national scientific discourse. Additionally, such cooperation facilitates the introduction of practices such as open access to methods and data, enhancing transparency in study conduct and increasing the impact of our projects. Regarding the scientific publishing, embracing and discussing open science can contribute to the growth and strengthening of journals, such as the Brazilian Journal of Physical Activity and Health (*Revista Brasileira de Atividade Física e Saúde* - RBAFS). This fosters a sense of belonging within the community and holds immense potential for expansion.

The adoption of open science in the field of physical activity and health will undoubtedly face challenges and resistance. In this regard, legitimate concerns exist about increased sharing and transparency in research, including ethical and methodological aspects, data protection, and risk of misinformation (pseudoscience and fake news), among others. However, making science closer than the necessary does not prevent any of these issues. On the contrary, scientific transparency accelerates the detection and eventual correction of improper practices, whether unintentional or intentional. Over generations, research groups and institutions have reproduced working methods that could often be more transparent, collaborative, and reproducible. At this moment, this cultural shift represents the starting point and, thus, our greatest challenge. Institutional structures and individual behaviors still make academia a hostile and non-inclusive environment. Furthermore, scientific practices continue to overlook identities and groups historically marginalized in science. Overcoming these obstacles requires an integrated and continuous approach, beginning with the identification of priority strategies to promote open science[7].

In summary, the culture of open science depends on a commitment to a model of science built on trust, transparency, collaboration, and sharing. In this context, the engagement of research group leaders, academic institutions, funding agencies, the Ministries of Health and Education, and research ethics organizations is crucial. Individual actions are quite important, however, they must be supported by governmental and institutional policies. Therefore, it is worth celebrating initiatives such as the Open Data Plan from the Ministry of Health[5], requirements for public dissemination strategies in proposals submitted to calls from the National Council for Scientific and Technological Development (*Conselho Nacional de Desenvolvimento Científico e Tecnológico* - CNPq), and upcoming changes to the evaluation scheme of the Coordination for the Improvement of Higher Education Personnel (*Coordenação de Aperfeiçoamento de Pessoal de Nível Superior* - CAPES)[9], which ideally will replace the outdated Qualis Periodicos scheme.

In our academic field, researchers in physical activity and health can begin locally, within their study environments and laboratories. Open science adoption broadens perspectives, voices, and viewpoints in science, creating opportunities that extend beyond academic walls. We live in a time to promote greater transparency and diversity, offering a chance to amplify the impact of our research so that knowledge and the scientific process can engage more closely with society, making science more collaborative, tangible, and trustworthy.

Conflict of Interest

The author declares no conflict of interest.

Availability of research data and other materials

The contents underlying the research text are contained in the manuscript.

Acknowledgments

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Reviewers' assessment

The reviews of this article were originally conducted in Portuguese. This version has been translated using ChatGPT and subsequently reviewed by the Chief Editors.

Reviewer A

Júlio Brugnara Mello
Pontificia Universidad Católica de Valparaíso, Valparaíso, Chile

- Was there any indication of plagiarism in the manuscript?
  No
- Did the authors provide clarifications on the ethical procedures adopted for conducting the research?
  Not applicable

Comments to the author

Dear Daniel Umpierre,

- First of all, as a reviewer and also as an associate editor of the Revista Brasileira de Atividade Física e Saúde, I would like to thank you for submitting the manuscript and for taking the initial step toward a necessary discussion in our field. The manuscript highlights critical points of an international debate and anchors them in our reality, addressing significant processes that shape Brazilian science, such as CAPES' system for evaluating scientific journals. Below, I provide some specific comments that I hope will be helpful.

Final decision

- Minor revisions required

Reviewer B

Helcio Kanegusuku
Hospital Israelita Albert Einstein, São Paulo, São Paulo, Brazil

- Was there any indication of plagiarism in the manuscript?
  No
- Did the authors provide clarifications on the ethical procedures adopted for conducting the research?
  Not applicable

Comments to the author

- The topic addressed is relevant and significant for the field. The manuscript is clearly and objectively written and is well-developed. I believe this manuscript has great potential for publication if some minor adjustments are made. Below are some points that I consider important to address:
- Include the full meanings of the acronyms (e.g., UNESCO, SUS, among others).
- Revise the following sentence: "… However, accepting open science is easier than engaging in collaborative research practices[6] …," as its meaning is not entirely clear.
- Although the author highlighted some difficulties and challenges in implementing open science in studies on physical activity and health, other relevant challenges were not addressed, such as:
- The quality of data collection conducted by researchers and individuals outside academia, which may impact the quality of data to be shared;
- Protection of participants' personal data in research;
- And others. Addressing these challenges will enrich the discussion and contribute to improving the implementation of open science.
- Add reference 9 to the "References" section.

Final decision

- Minor revisions required