Editorial

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The "Open Science" promise vs the Author-pays reality. The Hidden Costs of Open Access: Equity, Quality, and Trust

Ricardo Santos de Oliveira [1], Matheus Ballestero [1,2]

[1] Departamento de Cirurgia e Anatomia, Faculdade de Medicina de Ribeirão Preto, Universidade de São Paulo, Ribeirão Preto, Brasil

[2] Departamento de Medicina, Universidade Federal de São Carlos, São Carlos, Brasil

✉ Ricardo de Oliveira, MD

e-mail: rsoliveira@gmail.com

Available at:
http://www.archpedneurosurg.com.br/

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The movement toward open science was born from a simple and powerful ethical premise: knowledge should circulate freely. In pediatric neurosurgery, where evidence is often limited by rare diseases, small cohorts, and difficult-to-standardize outcomes, open access can be a genuine accelerator. It allows clinicians in resource-limited settings, trainees, and even families to access information that may shape decisions for children with life-altering conditions.

The "publish or perish" culture in academic science can be dangerous because it rewards quantity of publications more than quality, rigor, and truth. That pressure can quietly push individuals, labs, and whole fields toward behaviors that harm science and sometimes harm patients [1].

Yet the current form of "open access" frequently comes with an uncomfortable contradiction. Much of what is now called "open" is not free; rather, the cost has shifted from the reader to the author. The result is a model in which publication is increasingly tied to the capacity to pay. In practice, these risks transforming an ethical project—open science—into a financial gatekeeping system.

A recent analysis discussed in the international press highlights how the four largest commercial scientific publishers—Elsevier, Springer Nature, Wiley, and Taylor & Francis—earned more than $7 billion in 2024, with reported profit margins above 30% [2]. These numbers are not merely financial details; they reveal how publishing has become a high-margin industry in which output volume is economically rewarded. In the transition from subscription-based access to the "author-pays" model, the incentives have changed. The new system risks rewarding the quantity of publications rather than the strength of evidence [3].

The consequences extend beyond cost and equity. When the volume of manuscripts becomes the engine of revenue, the stress on peer review increases. Editors and reviewers are overwhelmed. Rapid publication becomes a marketing advantage. "Speed" begins to compete with scrutiny. And

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the literature becomes vulnerable—not only to error, but also to manipulation.

Predatory journals represent the most visible expression of this environment. There are 2,780 predatoty journals that can be checked in the website (https://www.predatoryjournals.org/the-list/journals).

They imitate legitimate publications, charge fees, promise rapid acceptance, and frequently provide minimal review. They capture authors under pressure, especially those early in their careers or those without institutional guidance. But focusing only on predatory journals can be misleading, because the incentive problem is not limited to fringe actors. Even established journals can be affected when systems are stretched or exploited [4].

This concern was underscored by the recent withdrawal by Elsevier of the article titled "Fragments SARS-Cov-2 in aquatic organism represent an additional environmental risk concern: Urgent need for research" [5]. The retraction notices states that the editorial process was compromised due to a breach affecting peer review, and the editors could no longer trust the integrity of the work. The details belong to another discipline, but the message is universal: peer review is not a guarantee; it is a process that depends on integrity, time, and safeguards.

Beyond journals and metrics, fake science is increasingly amplified by social media, where attention rewards dramatic conclusions over careful evidence. Low-quality or even fabricated studies—often from predatory journals or manipulated peer-review pipelines—can spread rapidly as screenshots, short videos, and influencer threads, stripped of context and methodological limitations. Once viral, these claims are hard to correct: retractions rarely travel as far as the original post, and algorithmic feeds can repeatedly surface the same misinformation to clinicians, patients, and families. In medicine, this creates a real safety issue, because shaky findings can shape public perception, pressure clinicians, and even influence treatment decisions long before the scientific community has time to verify the results.

Retractions should not automatically be viewed as scandals. They can also be understood as warning lights on the dashboard of science. They indicate that quality control has failed somewhere in the chain. If retractions increase, it may reflect not only misconduct but also the pressure of speed, the overload of editorial systems, and an ecosystem that favors output.

Pediatric neurosurgery is not immune. Our literature includes small studies, heterogeneous populations, and outcomes that can be difficult to measure. Under these conditions, even honest methodological limitations can be amplified into overstated conclusions. When weak evidence multiplies, it does not simply "add knowledge." It increases noise, confuses clinical decision-making, and ultimately threatens trust. In a field where interventions shape the entire life trajectory of a child, the tolerance for unreliable science should be minimal.

The author-pays model creates an additional ethical tension for pediatric neurosurgery. Many clinicians and researchers work in settings where Article Processing Charge (APC) represents an impossible barrier. When the ability to publish becomes tied to institutional wealth, the global scientific conversation becomes distorted. Low- and middle-income countries contribute disproportionately to the clinical burden of pediatric neurosurgical disease, yet may be excluded from authorship and visibility. This is not open science; it is open to read, but closed to contribute.

The solution is not to reject open access. Open access remains a worthy goal. The problem lies in confusing openness with payment and dissemination with quality. The model must evolve so that scientific publishing is financially sustainable without turning "open" into a synonym for "pay-to-publish."

The quality of medical journals depends on several factors involving 3 groups of people; namely: the authors, the reviewers and the editors. Archives of Pediatric Neurosurgery (APN) formulated its essential requirements for the manuscripts submitted for possible publication [6].

What should change? First, journals must strengthen transparency: APCs should be clearly justified, waiver policies should be functional rather than symbolic, and editorial safeguards against peer-review manipulation should be treated as essential infrastructure. Second, academic institutions should reform incentives. If promotion and prestige depend mainly on publication counts, the system will inevitably reward volume. Rigor, reproducibility, clinical relevance, and ethical conduct must carry more weight than raw productivity. Third, as authors and reviewers, we must be deliberate. Journal selection should

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be based not only on impact or visibility but also on transparency, editorial governance, and the credibility of peer review.

Open science should mean more than access to PDFs. It should mean openness of methods, openness of data when ethically possible, and openness to critique and replication. Above all, it should mean openness that does not exclude participation based on resources. Pediatric neurosurgery, because of its ethical burden and its high clinical stakes, should be at the forefront of defending a publishing culture where trust matters more than throughput.

If open science becomes merely an invoice attached to publication, we risk building a literature that is widely accessible but progressively less reliable. A truly open scientific ecosystem must be open to read, open to verify, and open to contribute—without sacrificing integrity on the altar of volume.

References

1. Nicholas S. Publish or Perish Paradox. EBSCO Research Starters [Internet]. 2021 [cited 2026 Jan 1]. Available from: https://www.ebsco.com/research-starters/education/publish-or-perish-paradox
2. Ansede M. The fall of a prolific science journal exposes the billion-dollar profits of scientific publishing. EL PAÍS English [Internet]. 2025 Nov 28 [cited 2026 Jan 2]. Available from: https://english.elpais.com/science-tech/2025-11-28/the-fall-of-a-prolific-science-journal-exposes-the-billion-dollar-profits-of-scientific-publishing.html
3. Universitat Autònoma de Barcelona (UAB). Science under the control of major publishers: profit over knowledge. UAB Barcelona Newsroom [Internet]. 2025 Nov 19 [cited 2026 Jan 2]. Available from: https://www.uab.cat/web/newsroom/news-detail/science-under-the-control-of-major-publishers-profit-over-knowledge-1345830290613.html?detid=1345971403769
4. Vereen R, King B, Razak A, Mol BW, Malhotra A. Safeguarding the integrity of scientific literature in the 21st century. Pediatr Res. 2025 Dec 7. doi: 10.1038/s41390-025-04647-0.
5. Charlie-Silva I, Malafaia G. Retraction notice to "Fragments SARS-Cov-2 in aquatic organism represent an additional environmental risk concern: Urgent need for research" [Sci Total Environ. 817 (2022) 153064]. Sci Total Environ. 2025;992:180021. Epub 2025 Jul 5. doi: 10.1016/j.scitotenv.2025.180021.
6. de Oliveira RS. Archives of Pediatric Neurosurgery: the challenges of implementing an online journal. Arch Pediatr Neurosurg [Internet]. 2019 Aug 10 [cited 2025 Dec 24];1(1):1. Available from: https://archpedneurosurg.com.br/sbnped2019/article/view/2

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