

Dishonest behavior in biomedical journals: analysis of two cases and reflections on their detection

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ABSTRACT

Introduction. Scientific dishonesty is a persistent, increasingly sophisticated phenomenon that poses a growing challenge for editorial work in biomedical journals.

Objectives. To describe the process of detecting fraudulent publication of articles submitted to a scientific journal in health sciences during 2024.

Methods. A retrospective observational documentary study was conducted. All original manuscripts received during 2024 by a scientific journal in health sciences were included. Each text was evaluated using the Similarity Check software and analyzed by the editorial committee in accordance with the Committee on Publication Ethics (COPE) criteria.

Results. Of the 71 manuscripts evaluated, two cases of fraud were identified. The first corresponded to duplicate publication by the same author; the second, to covert plagiarism by translation from another author. In both cases, the manuscripts were rejected, the authors were notified, and the right of reply was offered, which was not satisfactory.

Conclusion. Two attempts at fraudulent publication were documented in 2024, detected using similarity tools and confirmed by editorial analysis.

Keywords: *scientific misconduct; plagiarism; editorial policies; publications, ethics.*

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INTRODUCTION

Science, as a human endeavor, has produced extraordinary advances, but it has not been free from ethical tensions or episodes of dishonesty. Far from being a contemporary phenomenon, scientific fraud has historical precedents that show a clear relationship with social, institutional, and personal factors.

One of the first known conflicts was between Isaac Newton and Robert Hooke in the 17th century: a dispute over the authorship of findings that involved editorial maneuvers and the systematic omission of Hooke's recognition.¹ Decades later, the case of the Piltdown fossil—a paleontological forgery accepted for more than 40 years—illustrated how prejudice and dominant narratives can facilitate scientific deception.² In the 20th century, the omission of Rosalind Franklin's decisive contribution to the discovery of the structure of DNA exposed another form of dishonesty: the invisibility of key contributions.³

Scientific fraud gained greater media visibility with cases such as that of Andrew Wakefield, whose 1998 article in *The Lancet* linked the MMR vaccine to autism. Although it was retracted due to lack of evidence and a conflict of interest, its dissemination caused a crisis of public confidence in vaccination.⁴ Scandals involving data fabrication have also been documented, including those of researcher Hwang Woo-Suk in South Korea⁵ and of Yoshitaka Fujii in anesthesiology.⁶ More recently, during the COVID-19 pandemic, Surgisphere provided unverifiable data for studies published in *The Lancet* and *The New England Journal of Medicine*, which were quickly retracted.⁷

This background shows that scientific dishonesty is neither exceptional nor marginal, but rather a possible form of behavior in the world of science. In a context where the pressure to publish is intensifying, the role of scientific editors is becoming more complex and critical. The editorial task involves ensuring the veracity of knowledge, especially in public health.⁸ However, detecting fraud at an early stage is complex. Tools such as iThenticate™ allow textual similarity to be identified, but they do not detect image manipulation, fabrication of results, or fictitious authorship.⁹

Even peer review, considered the main quality filter, has limitations. An experimental study showed that reviewers did not detect deliberate errors introduced into fictitious manuscripts.¹⁰ Added to this are emerging forms of fraud, such as fake reviewers and

translation plagiarism.^{11,12} It is estimated that 2% of scientists have falsified data, and 30% have engaged in questionable practices.¹³ Another study has reported that 67.4% of retractions were attributable to misconduct, including fraud or suspected fraud (43.4%), duplicate publication (14.2%), and plagiarism (9.8%).¹⁴ In this scenario, artificial intelligence (AI) is presented as a dual tool: it can detect manipulated images or statistical inconsistencies,^{15,16} but it is also capable of generating entire manuscripts that are difficult to distinguish from authentic texts.^{17,18} The prevalence of unethical behavior in research, including falsification, fabrication, or plagiarism, has been estimated at around 2.9%, while questionable research practices are found in up to 12.5% of cases in surveys of researchers; in addition, nearly 40% reported having observed inappropriate behavior in other colleagues.¹⁹

There is little documentation on how editorial fraud is detected in the daily practice of regional scientific journals, especially in Argentina. Thus, this paper describes and analyzes the process of detecting fraudulent publication of articles submitted to a scientific journal in health sciences in Argentina during 2024.

METHODS

A retrospective observational documentary study was conducted. All original manuscripts received by the journal between January 1 and December 31, 2024, were included. Texts that could not be evaluated by similarity software, such as letters to the editor or book reviews, were excluded.

Each manuscript underwent an initial analysis using the Similarity Check program (iThenticate®) and was subsequently evaluated by the editorial committee. The interpretation of matches was not based on a fixed threshold, but on a qualitative analysis that considered length, location, the context of the matching content, and the absence of adequate citation or attribution.

Cases that met the criteria established by the Committee on Publication Ethics (COPE), such as total or substantial duplication without prior declaration (self-plagiarism) and plagiarism by translation without reference to the source article. Final validation was carried out by consensus of the editorial committee, which reviewed each case individually.²⁰

RESULTS

During 2024, the journal received a total of

71 manuscripts. All were evaluated using the Similarity Check (iThenticate™) software.

Two cases of attempted editorial fraud were identified, representing a rate of 2.8% (95% CI: 0.3%-9.7%). Both manuscripts were original articles.

The first case, in the field of public health, had a similarity index of 94%. The editorial review determined that the manuscript had been previously published by the same author in another journal, without any declaration of duplication, constituting self-plagiarism. The second case, a clinical report in pediatrics, showed 34% similarity between the methods and results sections. It was found to have been translated and adapted from an English-language original article without attribution to the author, constituting translation plagiarism.

Both were addressed in accordance with COPE guidelines.²⁰ The manuscripts were rejected, the authors were notified, and the right of reply was offered. The responses were unsatisfactory. The committee decided to inform the original author affected, but not the institutions affiliated with the offenders.

DISCUSSION

The fraud detection rate (2.8%) in this series is in line with previous estimates that place serious editorial misconduct at 2%-5%.¹³ In both cases, the use of anti-plagiarism software was useful, but not sufficient. Tools such as Similarity Check can detect textual similarities, but they do not detect the appropriation of ideas, image manipulation, or fabricated data.^{21,22} In comparison, studies in international biomedical journals have reported similar rates of detectable fraud, although rates vary by specialty and detection methods. These comparisons allow us to gauge the magnitude of the problem and the need for more proactive editorial strategies. In this regard, some institutional initiatives stand out, such as the use of independent scientific integrity committees, mandatory training in publication ethics, and systematic procedures for verifying authorship and data provenance before peer review.^{23,24} However, these analyses are often based on indexed retractions and do not document cases detected before publication. In this regard, the present study provides practical evidence of editorial functioning in the face of attempts at fraudulent publication, especially in the context of Latin American scientific journals, where such data are scarce in the literature.

The case of translation plagiarism exemplifies a growing and difficult-to-detect strategy.²⁵ When not adequately addressed, such behavior affects the credibility of journals and distorts academic recognition systems. More sophisticated forms of fraud—such as data manipulation or translation plagiarism—require more in-depth editorial intervention.^{23,24} This reinforces the role of the editor as an essential ethical barrier in the publication process.²⁶

The COPE recommends structured protocols that include the right of reply and the option to inform institutions when a serious violation is confirmed.²⁰ The omission of this institutional notification remains a controversial decision.²³

Although the cases analyzed did not involve AI, it is essential to consider its potential impact. Models such as ChatGPT can write plausible manuscripts or simulate results that pass conventional editorial checks.^{17,18,27} This requires reviewing peer review processes, implementing statistical validations, strengthening training in scientific ethics, and developing more robust tools capable of detecting not only textual similarities but also syntactic patterns generated by artificial intelligence or by strategies such as translation-based plagiarism.²⁴ Some publishers have begun to implement mandatory disclosure policies for the use of AI and tools to detect artificially generated linguistic patterns.²⁴

Beyond technical resources, fraud prevention requires an institutional culture of integrity. Studies show that early ethical training programs help reduce the incidence of inappropriate behavior.^{23,24}

Therefore, it is necessary to transform scientific culture. Faced with the “publish or perish” paradigm, some authors have proposed the “publish and cherish” approach, which calls for a return to the ethical and human meaning of scientific research, prioritizing quality and integrity over quantity.²⁸

However, as behavioral psychology has pointed out, the propensity to deceive is inherent in human beings. In this sense, the goal should not be the absolute eradication of fraud, but rather its containment through consistent ethical systems.^{13,29}

This study has limitations that must be considered. The number of cases detected is low, which prevents generalizations. The validation of fraud relied on editorial judgment, without an external audit, introducing a subjective component. In addition, the analysis focused on

texts rather than images or statistical data, so other forms of scientific misconduct may have gone unnoticed. Despite these limitations, the study offers practical insights into the editorial approach to fraud in a regional scientific journal.

CONCLUSION

Two attempts at fraudulent publication were documented in 2024, detected using similarity tools and confirmed by editorial analysis. Although this is a limited series, the findings reinforce the importance of combining technical tools with robust editorial processes to safeguard scientific integrity. ■

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